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SCIENCE FICTION

Sept.

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How It
Will Happen:

Stories of the
space stations

by

ARTHUR C.
CLARKE



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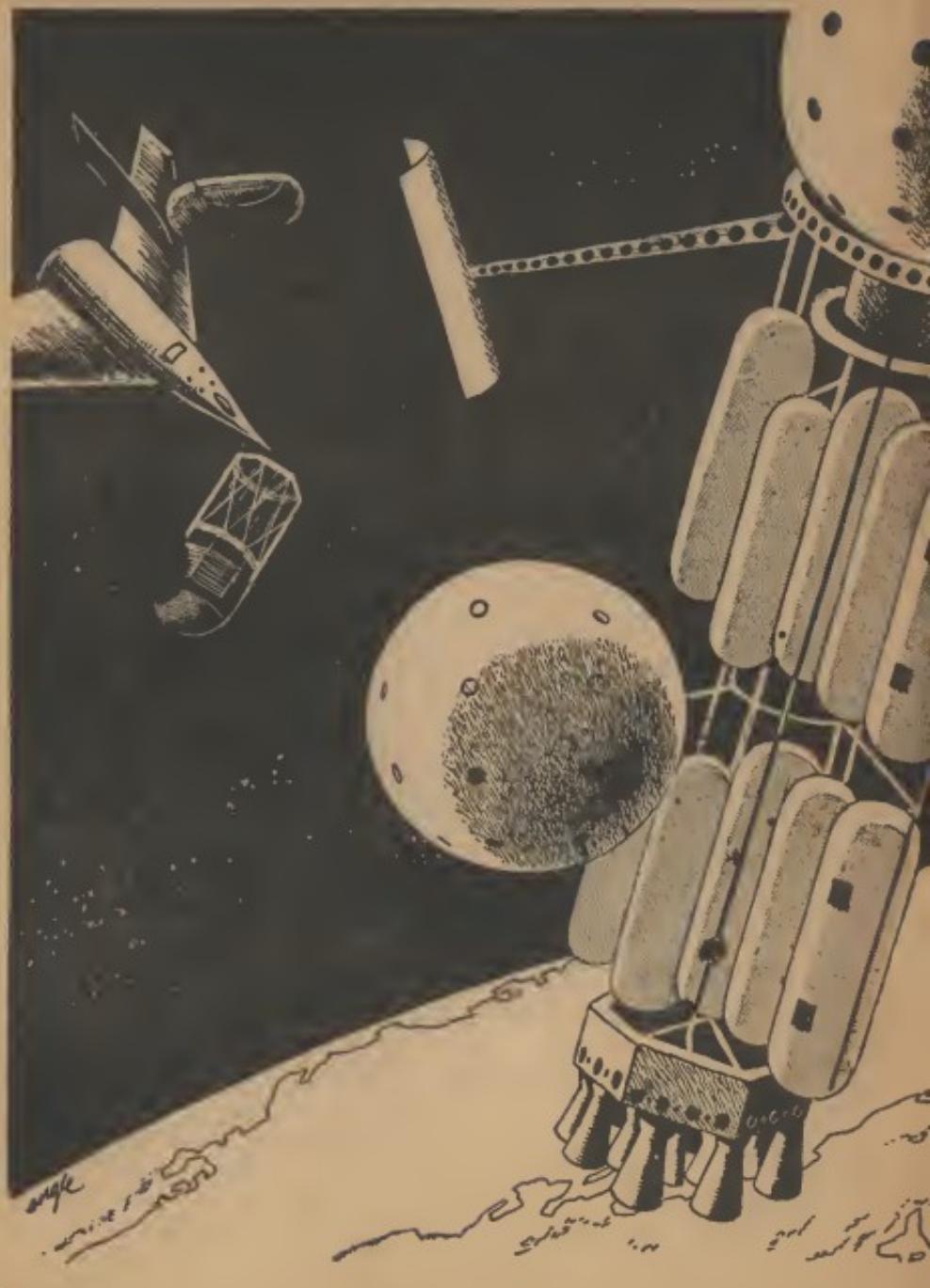
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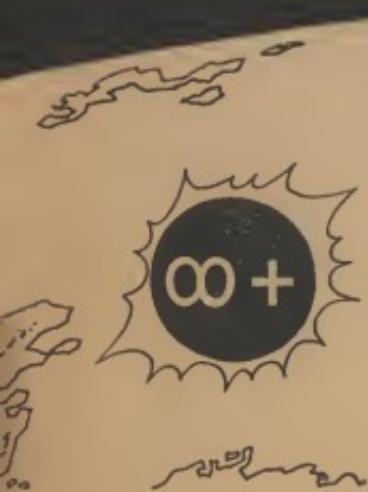




THE OTHER SIDE OF THE SKY

6 Stories of the Space Stations

by ARTHUR C. CLARKE



The International Geophysical Year opens soon. The launching of the first artificial Earth satellite is, of course, only one of many IGY projects, but it is the one dearest to the hearts of science fiction writers and readers. In these stories, Arthur C. Clarke—scientist, explorer, lecturer and writer—follows the probable steps between the unmanned "baseball" satellite and the first moon trip. The first three follow; the final three will appear in our next issue. The set is an Infinity-plus feature—and our personal salute to the IGY!



The OTHER
Side OF
THE Sky
No. 1

Special Delivery

*Relay Two had glamor—and all the
comforts of a pre-fab junkpile!*

I CAN still remember the excitement, back in 1957 (or was it '58?) when the United States launched the first artificial satellites and managed to hang a few pounds of instruments up here above the atmosphere. Of course, I was only a kid at the time, but I went out in the evening like everyone else, trying

to spot those little magnesium spheres as they zipped through the twilight sky hundreds of miles above my head.

I was never lucky enough to see one of those first satellites, but that didn't dampen my enthusiasm. Just as an earlier age had been air-minded, so mine was space-minded. I knew that

sooner or later the little instrument-carrying satellites would be followed by man-carrying ones—and I wanted to be one of those men.

It was a dream I shared with many of my friends, but in my case it came true. I was born at just the right time—1950, if you want to know—and I was ready when work started on the space stations. They were being rushed to completion, regardless of cost, to open up the millions of new TV and radio circuits that would become available as soon as we had transmitters out in space which could beam programs to anywhere on the globe.

My first tour of duty was aboard Relay Two, which is 22,000 miles above Entebbe, Uganda, and provides all the radio services for Europe, Africa and most of Asia. At this height—and at no other—a satellite or space station takes exactly a day to go round its orbit, and so stays poised forever above the same spot on the turning Earth.

I was still full of the glamor of spaceflight when the ferry-rocket carried me up to orbit, and even the fact that I was allowed only fifteen pounds of personal belongings seemed merely a minor annoyance. The climb up from Earth, with one pause for refueling, lasted almost ten hours, and because something had gone wrong with

the catering arrangements the hot meal we had been promised failed to materialize. But that was not the sort of hardship to discourage an eager young Space Cadet; what *did* chill me was my first glimpse of Relay Two.

Today it's a huge structure hundreds of yards across, but when I saw it for the first time it looked like a junkpile adrift in space. Prefabricated parts were floating around in hopeless confusion, and it seemed impossible that any order could ever emerge from this chaos.

I had an even bigger shock when the ferry rocket coupled up to the airlock and we went aboard. I'd been warned that accommodation was—what was the Company's phrase?—"still somewhat restricted." No one, however, had told me that it consisted of a few unserviceable freight-rockets that had been stripped of everything except air-purifiers. "The Hulks," we christened them; I had just enough room for myself, with a couple of cubic feet left over for my gear. I was living in the midst of infinite space—and hadn't room to swing a cat.

The lack of space was bad enough; what was even worse was the impossibility of keeping clean and tidy. Since there was no gravity, nothing would stay where it was put, unless you tied it down. And as that's one

thing you can't do with water—no one could have a bath. We had to manage as best we could with damp sponges.

It's only fair to say that we were being paid about a thousand dollars a week to endure these temporary discomforts, but after a month in space any one of us would have exchanged the money for a nice hot tub or a room that wasn't shared with six other men who all snored in different keys. We needed some recreation when we came off duty, and all we could do was to lie in—or a foot above—our bunks and grumble.

The result was inevitable. The fight actually started among the mathematicians, who are always highly-strung types, but before long the electronics and construction engineers had joined in. Luckily no great harm was done, because it's very difficult for weightless fighters to damage each other. But by the time our highly-trained, psychologically-tested astronauts had finished, the Hulks were in an even bigger mess than before.

To GIVE the Company its due, it reacted quickly when the news of the first space-battle reached Earth. Within forty-eight hours we were told that proper pressurized living quarters would soon be on their way up to us—complete with needle-jet shower-

baths that would operate (so we were assured) even in the absence of gravity. Nor were the showers the only luxury promised us: we would have an inflatable lounge big enough to hold no less than eight people, a microfilm library, a magnetic billiard table, lightweight chess sets, and similar novelties.

This splendid news kept us all in a good temper for the next few weeks, and at last the great day came when the eagerly-awaited ferry rocket would climb up to us with its precious cargo. I was off duty at the time, and stationed myself at the telescope where I'd spent most of my scanty leisure.

It was impossible to grow tired of exploring the great world hanging there in space beside me; with the highest power of the telescope, I seemed to be only a few miles above the surface. My favorite spectacle was the dawn coming up over the mountains in the heart of Africa. The line of sunlight would come sweeping across the Indian Ocean, and the new day would extinguish the tiny, twinkling galaxies of the cities shining in the darkness below me. Long before the sun had reached the lowlands around them, the peaks of Kilimanjaro and Mount Kenya would be blazing in the dawn, brilliant stars still surrounded by the night. As the sun

rose higher, the day would march swiftly down their slopes and the valleys would fill with light. Earth would then be at its first quarter and waxing.

Twelve hours later, I would see the reverse process as the same mountains caught the last rays of the setting sun. They would blaze for a little while in the narrow belt of twilight, then Earth would spin into darkness, and night would fall upon Africa.

It was not the beauty of the terrestrial globe, however, that I was concerned with now. Indeed, I was not even looking at Earth, but at the fierce blue-white star high above the western edge of the planet's disc. The automatic freighter was eclipsed in Earth's shadow; what I was seeing was the incandescent flare of its rockets as they drove it up on its twenty thousand mile climb.

I had watched ships ascending to us so often that I knew every stage of their maneuver by heart. So when the rockets didn't wink out, but continued to burn steadily, I knew within seconds that something was wrong. In sick, helpless fury I watched all our longed-for comforts—and, worse still, our mail!—moving faster and faster along the unintended orbit. The freighter's

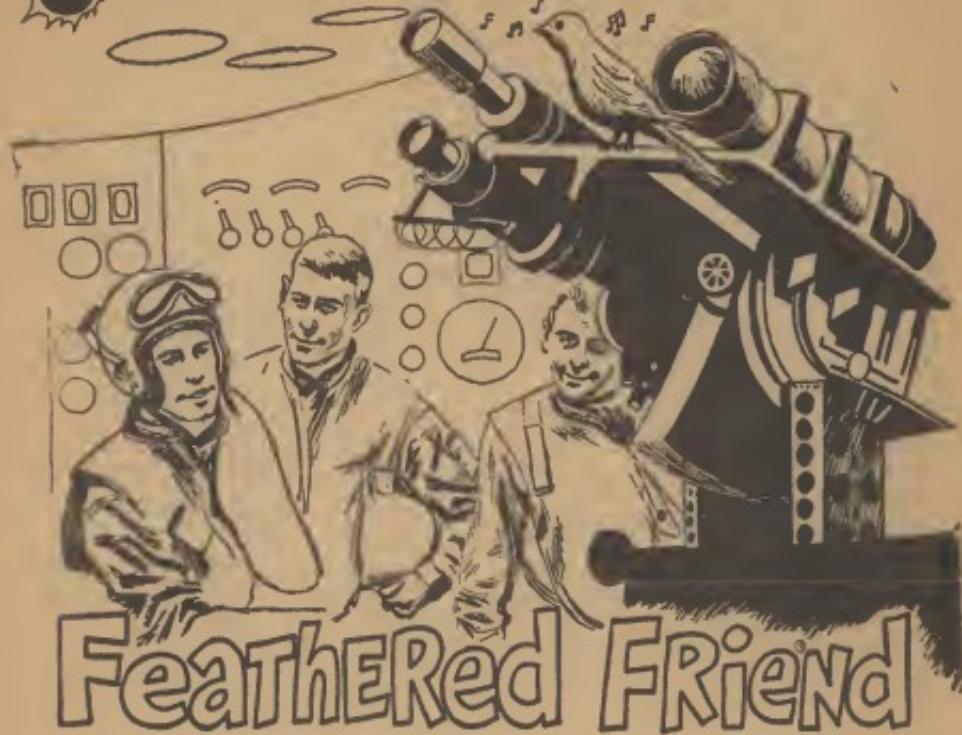
autopilot had jammed; had there been a human pilot aboard, he could have over-ridden the controls and cut the motor, but now all the fuel that should have driven the ferry on its two-way trip was being burned in one continuous blast of power.

By the time the fuel tanks had emptied, and that distant star had flickered and died in the field of my telescope, the tracking stations had confirmed what I already knew. The freighter was moving far too fast for Earth's gravity to recapture it—indeed, it was heading into the cosmic wilderness beyond Pluto. . . .

It took a long time for morale to recover, and it only made matters worse when someone in the computing section worked out the future history of our errant freighter. You see, nothing is ever really lost in space. Once you've calculated its orbit, you know where it is until the end of eternity. As we watched our lounge, our library, our games, our mail receding to the far horizons of the Solar System, we knew that it would all come back one day, in perfect condition. If we have a ship standing by it will be easy to intercept it the second time it comets round the Sun—quite early in the spring of the year 15,862 A.D.



The OTHER SIDE OF the SKY : No. 2



Feathered Friend

TO THE BEST of my knowledge, there's never been a regulation which forbids one to keep pets in a space station. No one ever thought it was necessary—and even had such a rule existed, I am quite certain that Sven Olson would have ignored it.

With a name like that, you will picture Sven at once as a six-foot-six Nordic giant, built like a bull and with a voice to match. Had this been so, his chances of getting a job in space would have been very slim; ac-

tually he was a wiry little fellow, like most of the early spacers, and managed to qualify easily for the 150-pound limit that kept so many of us on a reducing diet.

Sven was one of our best construction men, and excelled at the tricky and specialized work of collecting assorted girders as they floated around in free fall, making them do the slow-motion, three-dimensional ballet that would get them into their right positions, and fusing the pieces together when they were

Pets on space stations?

Well, why not? **Claribel**

was right at home. . . .



precisely dovetailed into the intended pattern. I never tired of watching him and his gang as the station grew under their hands like a giant jigsaw puzzle; it was a skilled and difficult job, for a spacesuit is not the most convenient of garbs in which to work. However, Sven's team had one great advantage over the construction gangs you see putting up skyscrapers down on Earth. They could step back and admire their handiwork without being abruptly parted from it by gravity. . . .

Don't ask me why Sven wanted a pet, or why he chose the one he did. I'm not a psychologist, but I must admit that his selection was very sensible. Claribel weighed practically nothing, her food requirements were infinitesimal—and she was not worried, as most animals would have been, by the absence of gravity.

I first became aware that Claribel was aboard when I was sitting in the little cubbyhole laughingly called my office, checking through my lists of technical stores to decide what items we'd be running out of next. When I heard the musical whistle beside my ear, I assumed that it had come over the station intercom, and waited for an announcement to follow. It did not; instead, there was a long and involved pattern of melody that made me look up with such a start that I forgot all about the angle-beam just behind my head. When the stars had ceased to explode before my eyes, I had my first view of Claribel.

She was a small yellow canary, hanging in the air as motionless as a hummingbird—and with much less effort, for her wings were quietly folded along her sides. We stared at each other for a minute; then, before I had quite recovered my wits, she did a curious kind of backward loop I'm sure no earthbound canary

had ever managed, and departed with a few leisurely flicks. It was quite obvious that she'd already learned how to operate in the absence of gravity, and did not believe in doing unnecessary work.

Sven didn't confess to her ownership for several days, and by that time it no longer mattered as Claribel was a general pet. He had smuggled her up on the last ferry from Earth, when he came back from leave—partly, he claimed, out of sheer scientific curiosity. He wanted to see just how a bird would operate when it had no weight but could still use its wings.

Claribel thrived and grew fat. On the whole, we had little trouble concealing our unauthorized guest when VIP's from Earth came visiting. A space station has more hiding places than you can count; the only problem was that Claribel got rather noisy when she was upset, and we sometimes had to think fast to explain the curious peeps and whistles that came from ventilating shafts and storage bulkheads. There were a couple of narrow escapes—but then who would dream of looking for a canary in a space station?

WE WERE NOW ON twelve-hour watches, which was not as bad as it sounds since you need little sleep in space. Though of

course there is no "day" and "night" when you are floating in permanent sunlight, it was still convenient to stick to the terms. Certainly when I woke up that "morning" it felt like 6 a.m. on Earth. I had a nagging headache, and vague memories of fitful, disturbed dreams. It took me ages to undo my bunk straps, and I was still only half awake when I joined the remainder of the Duty Crew in the mess. Breakfast was unusually quiet, and there was one seat vacant.

"Where's Sven?" I asked, not very much caring.

"He's looking for Claribel," someone answered. "Says he can't find her anywhere. She usually wakes him up."

Before I could retort that she usually woke me up too, Sven came in through the doorway, and we could see at once that something was wrong. He slowly opened his hand, and there lay a tiny bundle of yellow feathers, with two clenched claws sticking pathetically up into the air.

"What happened?" we asked, all equally distressed.

"I don't know," said Sven mournfully. "I just found her like this."

"Let's have a look at her," said Jock Duncan, our cook-doctor-dietician. We all waited in hushed silence while he held Claribel against his ear in an attempt to detect any heartbeat.

Presently he shook his head. "I can't hear anything, but that doesn't prove she's dead. I've never listened to a canary's heart," he added rather apologetically.

"Give her a shot of oxygen," suggested somebody, pointing to the green-banded emergency cylinder in its recess beside the door. Everyone agreed that this was an excellent idea, and Claribel was tucked snugly into a face-mask that was large enough to serve as a complete oxygen-tent for her.

To our delighted surprise, she revived at once. Beaming broadly, Sven removed the mask, and she hopped on to his finger. She gave her series of "Come to the cookhouse, boys" trills—then promptly keeled over again.

"I don't get it," lamented Sven. "What's wrong with her? She's never done this before."

For the last few minutes, something had been tugging at my memory. My mind seemed to be very sluggish this morning, as if I was still unable to cast off the burden of sleep. I felt that I could do with some of that oxygen—but before I could reach the mask, understanding exploded in my brain. I whirled on the Duty Engineer and said urgently:

"Jim! There's something

wrong with the air! That's why Claribel's passed out. I've just remembered that miners used to carry canaries down to warn them of gas."

"Nonsense!" said Jim. "The alarms would have gone off. We've got duplicate circuits, operating independently."

"Er—the second alarm circuit isn't connected up yet," his assistant reminded him. That shook Jim; he left without a word, while we stood arguing and passing the oxygen bottle round like a pipe of peace.

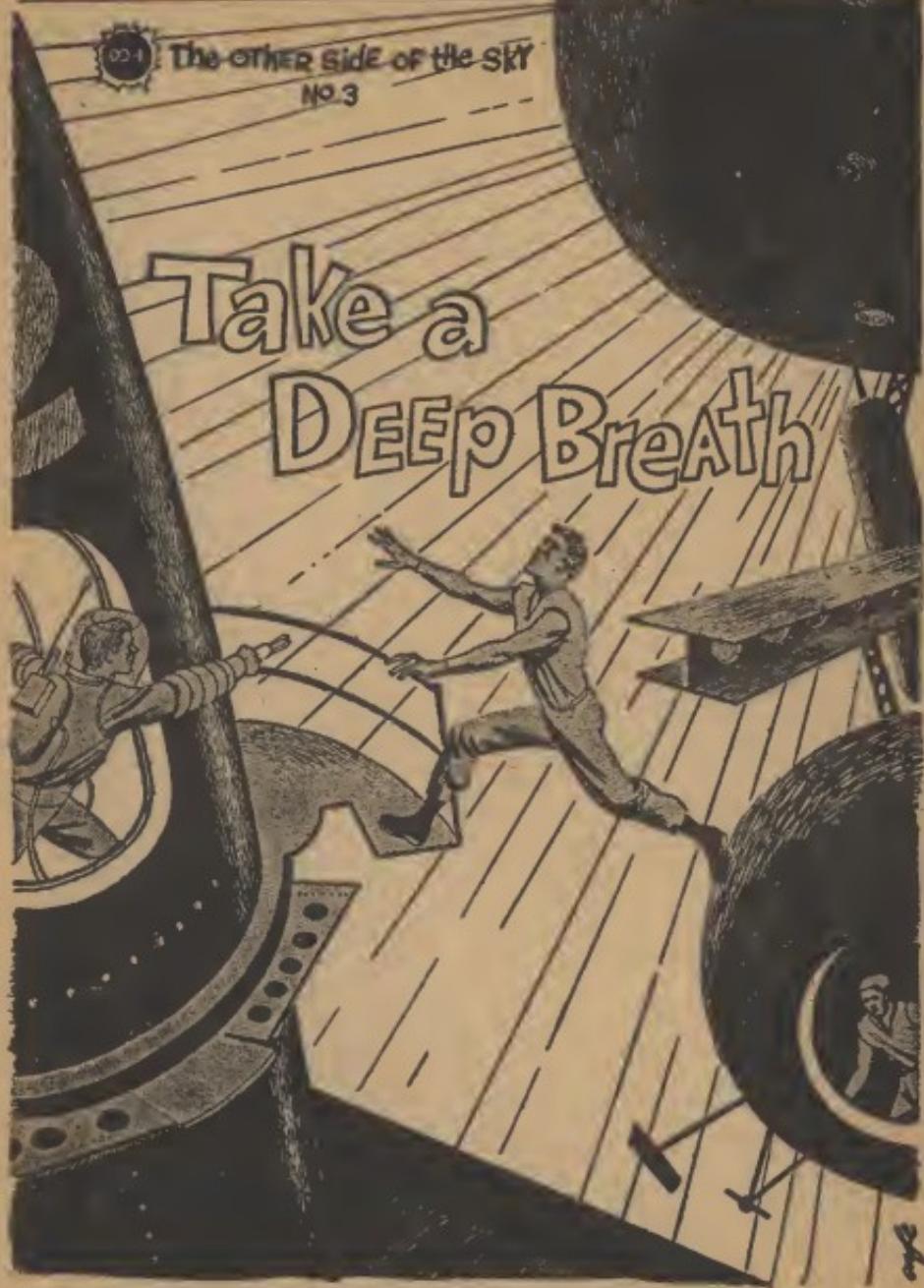
He came back ten minutes later with a sheepish expression. It was one of those accidents that couldn't possibly happen; we'd had one of our rare eclipses by Earth's shadow that night; part of the air-purifier had frozen up, and the single alarm in the circuit had failed to go off. Half a million dollars worth of chemical and electronic engineering had let us down completely. Without Claribel, we should soon have been slightly dead.

So now, if you visit any space station, don't be surprised if you hear an inexplicable snatch of bird song. There's no need to be alarmed: on the contrary, in fact. It will mean that you're being doubly safeguarded, at practically no extra expense.



The OTHER SIDE OF THE SKY
NO. 3

Take a DEEP Breath



A LONG TIME AGO I discovered that people who've never left Earth have certain fixed ideas about conditions in space. Everyone "knows," for example, that a man dies instantly and horribly when exposed to the vacuum that exists beyond the atmosphere. You'll find numerous gory descriptions of exploded space-travelers in the popular literature, and I won't spoil your appetite by repeating them here. Many of those tales, indeed, are basically true. I've pulled men back through the airlock who were very poor advertisements for spaceflight.

Yet, at the same time, there are exceptions to every rule—even this one. I should know, for I learned it the hard way.

We were on the last stages of building Communications Satellite Two; all the main units had been joined together, the living quarters had been pressurized, and the station had been given the slow spin around its axis that had restored the unfamiliar sensation of weight. I say "slow," but at its rim our two-hundred-foot-diameter wheel was turning at thirty miles an hour. We had, of course, no sense of motion, but the centrifugal force caused by this spin gave us about half

the weight we would have possessed on Earth. That was enough to stop things from drifting around, yet not enough to make us feel uncomfortably sluggish after our weeks with no weight at all.

Four of us were sleeping in the small cylindrical cabin known as Bunkhouse No. 6 on the night that it happened. The bunkhouse was at the very rim of the station; if you imagine a bicycle wheel, with a string of sausages replacing the tire, you have a good idea of the layout. Bunkhouse No. 6 was one of these sausages, and we were slumbering peacefully inside it.

I was awakened by a sudden jolt that was not violent enough to cause me alarm, but which did make me sit up and wonder what had happened. Anything unusual in a space station demands instant attention, so I reached for the intercom switch by my bed. "Hello, Central," I called. "What was that?"

There was no reply; the line was dead.

Now thoroughly alarmed, I jumped out of bed—and had an even bigger shock. *There was no gravity.* I shot up to the ceiling before I was able to grab a stanchion and bring myself to a

halt, at the cost of a sprained wrist.

It was impossible that the entire station had suddenly stopped rotating. There was only one answer; the failure of the intercom and, as I quickly discovered, of the lighting circuit as well, forced us to face the appalling truth. We were no longer part of the station; our little cabin had somehow come adrift, and had been slung off into space like a raindrop falling on a spinning flywheel.

There were no windows through which we could look out, but we were not in complete darkness, for the battery-powered emergency lights had come on. All the main air-vents had closed automatically when the pressure dropped. For the time being we could live in our own private atmosphere, even though it was not being renewed. Unfortunately, a steady whistling told us that the air we did have was escaping through a leak somewhere in the cabin.

THERE was no way of telling what had happened to the rest of the station. For all we knew, the whole structure might have come to pieces, and all our colleagues might be dead or in the same predicament as ourselves—drifting through space in leaking cans of air. Our one slim hope was that we were the only

castaways, that the rest of the station was intact and had been able to send a rescue team to find us. After all, we were receding at no more than thirty miles an hour, and one of the rocket scooters could catch us up in minutes.

It actually took an hour, though without the evidence of my watch I should never have believed that it was so short a time. We were now gasping for breath, and the gauge on our single emergency oxygen tank had dropped to one division above zero.

The banging on the wall seemed like a signal from another world. We banged back vigorously, and a moment later a muffled voice called to us through the wall. Someone outside was lying with his space-suit helmet pressed against the metal, and his shouted words were reaching us by direct conduction. Not as clear as radio—but it worked.

The oxygen gauge crept slowly down to zero while we had our council of war. We would be dead before we could be towed back to the station; yet the rescue ship was only a few feet away from us, with its air-lock already open. Our little problem was to cross that few feet—*without* spacesuits.

We made our plans carefully, rehearsing our actions in the full

knowledge that there could be no repeat performance. Then we each took a deep, final swig of oxygen, flushing out our lungs. When we were all ready, I banged on the wall to give the signal to our friends waiting outside.

There was a series of short, staccato raps as the power tools got to work on the thin hull. We clung tightly to the stanchions, as far away as possible from the point of entry, knowing just what would happen. When it came, it was so sudden that the mind couldn't record the sequence of events. The cabin seemed to explode, and a great wind tugged at me. The last trace of air gushed from my lungs, through my already-opened mouth. And then—utter silence, and the stars shining through the gaping hole that led to life.

Believe me, I didn't stop to analyze my sensations. I think—though I can never be sure that it wasn't imagination—that my eyes were smarting and there was a tingling feeling all over my body. And I felt very cold, perhaps because evaporation was already starting from my skin.

The only thing I can be certain of is that uncanny silence. It is never completely quiet in a space station, for there is always

the sound of machinery or air-pumps. But this was the absolute silence of the empty void, where there is no trace of air to carry sound.

Almost at once we launched ourselves out through the shattered wall, into the full blast of the sun. I was instantly blinded—but that didn't matter, as the men waiting in spacesuits grabbed me as soon as I emerged and hustled me into the airlock. And there, sound slowly returned as the air rushed in, and we remembered we could breathe again. The entire rescue, they told us later, had lasted just twenty seconds. . . .

Well, we were the founder-members of the Vacuum-Breather's Club. Since then, at least a dozen other men have done the same thing, in similar emergencies. The record time in space is now two minutes; after that, the blood begins to form bubbles as it boils at body temperature, and those bubbles soon get to the heart.

In my case, there was only one after-effect. For maybe a quarter of a minute I had been exposed to *real* sunlight, not the feeble stuff that filters down through the atmosphere of Earth. Breathing space didn't hurt me at all—but I got the worst dose of sunburn I've ever had in my life.



Illustrated by KLUGA



KLUGA



**When murder occurs on
a spaceship, the number
of suspects is at an
absolute minimum—and
Lefler was that minimum!**

THE CENTERDECK chronome-
ter said 1840 hours.

That startled Lefler into full
wakefulness. He was forty min-
utes overdue in relieving Makki
in the control room.

That wasn't like Makki, he
thought as he pulled on his cov-
eralls hastily. Makki was as
punctual—and as thorough—as
the maze of machinery whose
destiny he guided. He was as
cold as that machinery, too,
when others made a mistake. It
made him an efficient spaceship
captain and a disliked man.

Earth Transit

by CHARLES L. FONTENAY



Lefler shook his head to clear it of dream-haunted memories. He had awakened from a nightmare in which, somewhere, there was angry shouting, to find himself floating midway from floor to ceiling of the centerdeck of the *Marsward IV*. Somehow, his retaining straps had become unbuckled, letting him float free of his bunk in his sleep.

Not pausing to fold his bunk back against the curving hull, Lefler made his way briskly up the companionway, through the empty and darkened astrogation deck and into the control room.

"Makki," he called to the figure reclining in the control chair. "Makki, I'm due to relieve you. You're forty minutes overtime."

There was no answer. Floating up to the control chair, Lefler recoiled, bouncing painfully off the automatic pilot.

Makki was dead. Death had robbed his wide eyes of their dark scorn and smoothed the bitter lines of his heavy face. His coveralls were charred around the heat-beam burn in his chest.

The heat-gun bumped against Lefler's shoulder and drifted away at an angle across the gravityless control room. Lefler stared after it in horror.

Licking dry lips, he punched the communicator button.

"Blue alert!" he croaked into the microphone. "All hands to

control room. Blue alert!"

Anchoring himself to the automatic pilot, he studied Makki's body as dispassionately as he could. The captain was still strapped in the cushioned chair. Oddly, he was wearing gloves.

The log-tape was in the recorder beside the control chair. Clipped to a metal leaf on the stanchion beside the chair was Makki's notepad. Scrawled on it in the captain's handwriting was the notation: "73rd day. Earth transit."

"What's up, Lefler?" asked a voice behind him. Lefler turned to face Taat, the ship's doctor. Taat, a plump, graying man, was wiping his hands on the white smock he wore.

Lefler moved aside, letting Taat see Makki's body. Taat's eyes widened momentarily, then narrowed with a professional gleam. He stepped quickly to Makki's side, made as if to pick up the dead captain's wrist, then turned back to Lefler with a fatalistic flick of his hands.

"What was it, Lefler?" he asked in a low voice. "A fight?"

"I don't know," said Lefler. "I found him that way."

Taat raised his eyebrows.

"Robwood?" he asked softly. Robwood's head poked up through the companionway, and he floated into the control room. There was a streak of grease across the engineer's thin face.

"Great space!" exclaimed Robwood at once. "What happened to Makki?"

"Obviously, he's been shot," said Lefler in an even voice. "Any idea who did it, Robwood?"

"Wait a minute," objected Taat mildly. "That sounds like you are accusing Robwood, Lefler."

"I'm not," said Lefler hastily. "I'm not leaving you out, Taat. But there are only the three of us. One of you must have killed him."

"Great space, you don't think that I—" began Robwood.

"Just to get the record straight, Lefler," interrupted Taat, "let's put it this way: one of the three of us must have killed him."

IT WAS not only Lefler's duty watch; as astrogator, he became acting captain as a result of Makki's death. Moving to the side of the dead Makki, he turned the ship's radio transmitter toward distant Earth and pressed the sending key.

"*Marsward IV* to White Sands," he called. "*Marsward IV* to White Sands."

It would be several minutes before a reply could reach them.

Taat, on the other side of the control chair, was examining Makki's corpse. Robwood stood peering over his shoulder.

Lefler waited to see which one would comment first on the fact that Makki was wearing gloves. Neither appeared to notice it.

But the gloves put a thought into Lefler's own mind. Fingerprints!

He looked around the control room and found the heat-gun, bumping against the celestial camera. He pushed himself across the room, pulling a handkerchief from the back pocket of his coveralls as he did so. He wrapped the heat-gun in the handkerchief, stuck it in a drawer beneath one of the control panels, locked the drawer and put the key in his pocket.

The loudspeaker buzzed.

"*Marsward IV*, this is Cape-town," said a slightly wavy voice. "We're relaying you to White Sands. Go ahead, please."

Lefler picked up the mike.

"*Marsward IV* to White Sands," he said. "This is Lefler, astrogator. Makki, captain, shot to death under unknown circumstances. I am assuming command. Instructions, please."

Taat turned away from Makki's body.

"He's been dead about thirty minutes." Taat looked at the control room chronometer. It said 1906 hours. "I'm going to list the time in the death certificate as 1830."

"You can tell?" asked Robwood in astonishment.

"By the eyes," said Taat.

"Wait a minute," said Lefler. "It was only 1840 when I started up here. You mean he'd been dead only ten minutes then? He was already forty minutes overdue waking me for my duty watch."

"Could be ten or fifteen minutes either way," conceded Taat. "If he was late, don't forget that we don't know what happened up here."

"One of us does," reminded Lefler grimly.

"Capetown to *Marsward IV*," said the loudspeaker. "Relaying instructions from White Sands. Lefler's temporary command of ship confirmed. All personnel will be booked on suspicion of murder and mutiny on arrival at Marsport. Captain Makki's body will be preserved and brought down at Marsport. Each crew member will dictate a statement on the circumstances of Captain Makki's death and an outline of his past association with Captain Makki, separately, on this beam for relay to Marsport."

The three looked at each other.

"That's that," said Lefler. "Robwood, if you and Taat will take Makki's body away and secure it outside the airlock, I'll get the ship's records up to date."

Taat unbuckled Makki's body

from the control chair. It did not change its slightly bent position as it drifted slowly upward.

"Why do you reckon he's wearing gloves, Lefler?" Taat asked curiously.

"I wondered when one of you fellows was going to say something about that!" burst out Robwood, a curious break in his voice. "All of us have been glaring at each other, suspecting each other, when Makki could have committed suicide!"

"Makki?" retorted Lefler dryly. "I doubt it."

PUSHING Makki's body down the hatch toward the airlock at the other side of the personnel sphere would have been an easy task for one man, but Lefler wanted Taat and Robwood to watch each other. He didn't want an "accidental" push to send the prime bit of evidence drifting away into space. When they had disappeared down the hatch with the corpse, he eased himself into the control chair and played back the log from the end of Robwood's last shift at 1000 hours.

Makki had recorded the usual observations of the solar, stellar and planetary positions when he went on duty. There was nothing else on the tape.

Lefler stared gloomily at the silent log-recorder. It seemed incredible to him that never

again, except on tape, would he hear Makki's harsh, sardonic voice. The almost inaudible hum of machinery deep in the ship only emphasized the oppressive stillness of space outside its thin walls.

With a sigh, he picked up the log-recorder microphone and pulled the star sextant down to eye level. He would record the bare facts of Makki's death after the initial position observations.

"*Marsward IV*, bound Marsport from White Sands," he recited in a monotone. "Earth-time, October 29, 2048, 1931 hours. Lefler reporting for duty and assuming command as per conversation with White Sands, to be recorded this date."

He squinted into the sextant. "Positions: Sun-Mars, 24°28'-42". Sun-Earth—"

He broke off. Where was Earth? Then he remembered.

"Damn!" he muttered. "The transit! A murder sure messes up the records around here."

The Earth transit was an event of considerable importance to an astrogator on a hop between Earth and Mars. Marsbound it began on the 73rd day out, Earthbound on the 187th day. Timing it, spaceship observers not only checked the accuracy of the ship's orbit, but also contributed data to the mass of knowledge available on the movements of Earth and Mars.

Lefler found the black disc of Earth in the smoked glass that automatically fell across the sextant lens when it swept by the sun. He checked the angle between the black spot and the leading edge of the solar disc.

"Earth transit already under way," he said into the mike. "Angle with leading edge, two minutes, forty seconds . . ."

He went around the sky, recording planetary and key stellar positions. He had just finished and switched the tape of his conversation with Earth to record in the log when Taat and Robwood returned.

"Makki's body will keep out there as well as in a refrigerator," said Taat with evident satisfaction. "Robwood tied the airlock into the alarm system so nobody can go out and cut the body free without arousing the others."

"You're both mighty cooperative for one of you to be a murderer," remarked Lefler.

"Maybe neither of us is," said Robwood. "As far as I'm concerned, you may be the man."

"Or, as Robwood suggested earlier, Makki may have shot himself," added Taat.

"Robwood, you and I are going to have to do twelve-hour watches from here to Mars, since Taat doesn't know how to operate the controls," said Lefler. "I'll stay on duty till 0600, and

you'd better get some sleep after you've radioed your statement to White Sands."

"Okay," said Robwood. "But are we still going to record star positions in the log every eight hours, or just every twelve hours now?"

"Twelve, I think. But the Earth transit's on right now, and until Terra swings across that half a degree of the sun's face, we'd better take readings on that every four hours, anyhow."

"Well, that's just for a little more than two days," said Robwood. "Look, Lefler, I'm overdue on my sleeping time anyway, so how about letting me make my statement on . . . on Makki first?"

"Blast away," said Lefler. "The mike's yours. We'll leave the control room so you'll feel freer to talk."

LEFLER munched thoughtfully on a hot sandwich. Across the control room, in the astrogator's chair, Taat sucked at a bulb of coffee.

"Nice of you to fix up this lunch, Taat," said Lefler. "I'm not tied strictly to the control room during my watch, you know. But little things like this relax the tension."

"Yes, it's a peculiar situation, Lefler," said Taat in a tone that indicated he had been thinking about it. "Psychologically, I

mean. Now if there were only the two of us, and Makki drifting out there dead, both of us would know who shot him. With three of us, it's different.

"You and I are sitting here talking as though neither of us killed Makki. Maybe you hadn't thought of it, but that means that tacitly, for now, we're assuming Robwood killed him. But, for all I know, you did. And, if you didn't, for all you know, I did."

"Until we find out, I have to suspect you both," said Lefler flatly.

"I could say the same thing," murmured Taat. "But one of us may be lying."

"Of course, Makki could have shot himself, as Robwood suggested," said Lefler. "If he had relaxed his grip on the heat-gun after pressing the trigger, it would have drifted up away from him. There were the gloves, you know."

"Why wouldn't Makki want his fingerprints on the gun if he were committing suicide?" objected Taat. "I'll concede that Makki had strong sadistic tendencies, but my guess is that the murderer put those gloves on him just to raise the possibility of suicide."

Taat finished his coffee and left the control room. Lefler washed down the last bit of his sandwich with his own coffee

and called White Sands on the radio. When he received an acknowledgment after the inevitable delay, he began to dictate his statement.

Lefler told of waking from his sleep period and finding himself forty minutes late for his watch. He described his discovery of Makki's body, what followed, and everything he could remember of what Taat and Robwood had said when they came to the control room.

"Makki was thoroughly detested by every member of the crew," Lefler related. "He did not fraternize and no one wanted to fraternize with him, because he was treacherous. In the midst of an apparently friendly conversation, he would suddenly unveil his authority with some biting and belittling remark. He never let anyone forget he was captain."

"Robwood was afraid of him and hated him intensely. Robwood had told me privately he intended to ask for a transfer to another ship after this hop to Mars. Makki held Robwood in considerable scorn because Robwood is a timid man, and a slow thinker outside his own field of engineering. Makki made no effort to conceal that scorn."

"Taat was as contemptuous of Makki as Makki was of Robwood. Makki was ruthless with any open attempt to question

his judgment, but Taat could do it with a raised eyebrow, his tone of voice or a well-chosen phrase. Makki sensed this, and alternated between treating Taat as more of an equal than either Robwood or me and 'riding' Taat harder than anyone else.

"Robwood and Taat have been aboard with us for the last five hops, but I've been with Makki since both of us graduated from the Space Academy. We were boys together, but I have never liked Makki. He always had too little respect for human dignity. He was a good space captain because he was a genius with such impersonal things as machinery and astrogation, and I have never known him to slip up on a record or let a ship get a single second off course. But mankind is better off without him."

Lefler signed off and laid the microphone down. He realized suddenly that he was perspiring and his hands were trembling. The statement had been a major emotional strain.

Unstrapping himself from the control chair, he floated down past the astrogation deck and looked in on the centerdeck. Both Taat and Robwood were strapped to their bunks, apparently asleep.

Satisfied, Lefler returned to the control room. He wanted to listen, without embarrassing in-

terruptions, to Taat's and Robwood's statements as he transferred them from the radio recording tape to the ship's log.

THE TAPES rolled on the two connected machines, the log tape slowly, the radio tape at a faster clip. A loudspeaker was plugged into the radio-tape machine. Lefler kept it turned low, though the centerdeck was two decks down.

"I woke Makki at 0930 hours." It was Robwood's low voice on the tape. "He relieved me right at 1000 hours. I went down to the centerdeck and had a late lunch. Lefler strapped himself in for his sleeping period while I was eating. Taat ate lunch with me, and then we played cards for about an hour. We do that almost every day when Taat's sleeping periods are on the same schedule as mine. He changes his, because he's a psychologist and wants to watch all the crew members.

"I check the rocket engines and the fuel tanks every twenty-five days. When the Earth transit is coming up, I always do it two days ahead of time in case there are any corrections to be made in the ship's orbit. I got into a spacesuit and spent the rest of my free period outside the personnel sphere doing that. I took a break for supper, I'd say about 1600 hours, and went back to

my inspection. Taat ate with me and Lefler was asleep. Makki didn't eat with us. He did sometimes, but not often. He usually wanted to eat alone. With the Earth transit about due, I figured he'd already eaten and gone back to the control room.

"I was late for my sleeping period, but I wanted to finish my inspection. I had just gotten back through the airlock and was taking my spacesuit off when I heard Lefler call from the control room. He and Taat were both there when I got there.

"I didn't like Makki, but neither did Taat and Lefler. I suppose it'll come out, so I might as well tell about it. Makki broke up my engagement with a girl back on Earth several years ago. I wasn't going to sign on for the Mars hop because I was going to get married. Makki couldn't find an engineer to replace me, and he smooth-talked her out of it. He told me about it a long time afterward and laughed at me. I haven't ever seen her again."

"Lefler and Taat are both decent fellows and I don't think either one of them killed Makki. I think he shot himself. He ought to have!"

Robwood's final words were spoken in an outburst of concentrated bitterness. Lefler stared thoughtfully at the unwinding tapes as he waited for Taat's re-

port to tune in. He hadn't known that about Robwood's fianceé, but it was the sort of thing Makki wouldn't hesitate to do.

"The last time I saw Makki," came Taat's calm, controlled voice from the loudspeaker, "was 1615 hours. He had just finished lunch and was going back to the control room when I came onto the centerdeck from the storage deck below. Robwood came up from below a couple of minutes later and we ate supper together.

"Robwood and I usually play a round of cards after supper when we're on the same schedule, but he was busy and I was in the middle of an experiment in the lab I have set up on the storage deck. We went down to the storage deck together. He went on below to the airlock and I started the moving picture camera again on my experiment.

"I didn't go up again until Lefler sounded the alarm. He was alone with Makki in the control room when I got there, and Makki was dead.

"I must admit it is my personal feeling that whichever of my colleagues killed Makki is a benefactor to the human race, and I hope he escapes punishment. I did not know Makki before Robwood and I signed up together on the *Marsward IV* five voyages ago. I made the mis-

take of entering into a business transaction with him on our first Mars trip. He needed my capital and we became partners in purchasing a block of stock in a private dome enterprise. He accused me several times afterward of cheating him, but he handled the dividends and I think he was cheating me.

"As a psychologist, I would say that Lefler is more likely to have killed Makki coldly and deliberately, but Robwood is more likely to have killed him in the heat of an argument."

Taat's voice stopped. Lefler turned off the machines and disconnected them.

An argument. He had heard shouting in his dreams. Was that what had awakened him?

He tried to bring the dream into focus. It barely eluded him. All he could remember was that it was something about Makki.

BOTH Taat and Robwood were up by 0400 hours. They brought their breakfasts to the control room, along with coffee for Lefler.

It was a pleasant meal for the three of them. No one really seemed to care that one of the others was a murderer, Lefler thought. They talked and acted more like companions in crime—or like the murderer was none of them, but someone lurking somewhere else in the ship.

He wished he did not feel impelled to find out, if he could, who killed Makki. But he knew that Taat would be trying to find out, too—if Taat hadn't done it—because Taat was a psychologist and would look at it as a scientific problem. Robwood was the only one who might be temperamentally inclined to let the solution wait until they reached Mars.

When Robwood took over duty watch at 0600 hours, Lefler found Taat listening to a tape on criminal psychology on the centerdeck.

"Taat, didn't I hear you say you were working on some sort of an experiment on the storage deck while Makki was on watch yesterday?" asked Lefler.

Taat switched off the player.

"That's what I was doing," he said carefully, "but I don't remember saying anything about it."

"I listened to the reports you and Robwood made while I was recording them in the log," admitted Lefler. "I was interested in your estimate of Robwood's and my comparative abilities to commit murder."

Taat removed his spectacles, polished them and put them in his breast pocket before answering.

"I'm not surprised that you listened, Lefler—whether you're guilty or innocent," said Taat.

"You probably noted that I mentioned I was recording my experiments on film. If you'll go below with me, I'd like for you to see that film."

Together, they pulled themselves down to the storage deck. Over near the main electrical switchboard, Robwood had torn out three empty spacesuit lockers and built a compact laboratory for Taat. A dozen white mice and some hamsters floated in cages attached to the wall.

For Taat's convenience, Robwood had moved the storage deck chronometer from the other side of the deck to the lab. It read 0607.

Taat unrolled a screen against one of the spacesuit lockers, attached the film roll to the projector, darkened the deck and began the showing.

The film began on Taat's face, blurred and enormously enlarged, as he switched on the camera. Taat stepped backward until he was in focus, and picked up the microphone that tied into the sound track.

"This is an experiment with white mice in a maze under conditions of zero gravity," said the Taat on the screen. Stepping aside, he waved a hand at a wire contraption on a table. "I have here a three-dimensional maze. The chronometer is visible above it, so we can check the reaction time."

Lefler noted the chronometer reading. It was 1500. In the "day" square just below its center was the figure 73.

Lefler checked the chronometer in the picture as the film ran on. There was an announced break between 1612 and 1654. Other than that, it ran continuously to 1851, when his own voice sounded faintly, calling, "Blue alert! All hands to control room. Blue alert!" At that, Taat's startled face loomed up again before the lens and the film stopped abruptly.

Throughout the approximately three hours, Taat was always in the camera's view, running his mice through the maze and explaining his methods.

"What was that forty-minute break, Taat?" asked Lefler when Taat switched the lights on once again.

"Supper," said Taat. "Robwood and I ate together, and came back down from the centerdeck together. I saw Makki leave the centerdeck when I went up, but Robwood got there a minute or two later and I don't think he saw Makki."

"You seem to have established a pretty good alibi," said Lefler slowly. "How about Robwood?"

"Lefler, for your sake, I hate to say this. The only time Robwood was above the storage deck from the time I started this film was when we had supper to-



gether. I'd have seen him if he'd passed through, and the only way he could have gotten into the control room would have been through one of the ports."

"He couldn't, without breaking it and setting off an alarm," said Lefler. "Are you trying to tell me you think I killed Makki, Taat?"

"I was here," said Taat, waving his hand at the projector. "I was between Robwood and the control room all the time. You're the only one who could have gotten there without my seeing you, Lefler, and I found you alone with him fifteen minutes after he died."

"You're sure about that fifteen minutes?"

"Within a pretty narrow range. The dilation of the pupils is an accurate gauge. I don't say you killed him, Lefler. I hope they rule it was suicide."

Silently, Lefler went back to the centerdeck, undressed and strapped himself into his bunk. He found it hard to get to sleep. Something was nagging at the back of his mind. He hoped he wouldn't dream of Makki again.

WHEN LEFLER assumed his duty watch at 1800, he asked Robwood to stay in the control room with him for a talk. Robwood strapped himself in the astrogator's chair and waited while Lefler made the position

readings. Then Lefler swung his chair around to face Robwood.

"I want to check some things with you, Robwood," he said. "I've listened to your report and Taat's and I've seen a film of Taat's that seems to give you both an alibi. After Makki relieved you and you ate lunch, was suppertime the only time you came back into the personnel sphere?"

"That's right," said Robwood. "Taat and I played cards a while after lunch, but I think you were awake then."

"How long did your supper period last?"

"Oh, half an hour. Maybe a little longer. You were asleep and snoring."

Lefler shook his head savagely.

"Robwood, I'm afraid you're going to have to take over the ship. I want you to put me in irons and turn me over for Makki's murder when we get to Marsport."

Robwood started so violently he almost broke his retaining straps. He stared at Lefler for a full thirty seconds before he found his voice.

"You're not serious!" he exclaimed. There was a pleading note to his tone. "Lefler, you didn't shoot him, did you?"

"I must have, Robwood. But not consciously. I've been able at last to remember a nightmare

I had just before I found Makki's body.

"Makki and I were boys together, and he was just as mean and evil then as he was when he grew up. I was dreaming about the time Makki smashed my toy electric train and laughed about it. I tried to kill him then. I beat him with the semaphore and cut his face all up before he knocked me down and kicked me half senseless. I lived through that experience again in my dream.

"My bunk straps were loose when I woke up. I must have acted that dream out in a semi-conscious state. I must have gone up to the control room, tackled Makki and finally shot him."

"That's the silliest thing I ever heard of," retorted Robwood.

"It must be true, Robwood. Neither you nor Taat could have killed him, and Taat's got the film to prove it."

Robwood unstrapped himself and pushed himself to the companionway with some determination.

"Well, I'm not going to take over the ship and I'm not going to put you in irons," he said spiritedly. "I couldn't handle the ship on a twenty-four-hour basis for the next hundred and eighty-six days, and I'd rather think Makki killed himself."

He paused at the top of the companionway.

"Don't forget," he said. "The Earth transit ought to be at midpoint in a couple of hours."

Then he disappeared below.

Lefler took the magnetized pencil from the memorandum pad and wrote a reminder: "E.T. midpoint. Should check 28:16:54."

Lefler leaned back gloomily in the control chair. Had he killed Makki? It seemed the only way it could have happened, unless Makki had, indeed, committed suicide. And he just didn't think Makki had.

The chronometer said 1839. Exactly twenty-four hours ago, he had awakened from a nightmare and had come up to find Makki dead in this same chair. It seemed a century.

He glanced idly back at the memorandum pad. 28:15:64. He'd have to make an entry in the log in a little under two hours. How could he check accurately when the time of entry into transit was estimated?

Twenty-four plus two. Twenty-six.

He sat bolt upright, straining at his straps. He snapped down the communicator button.

"Robwood, come back up here!" he bellowed.

Unbuckling himself hastily, Lefler headed across the room toward the heat-gun rack.

TAAT was playing solitaire, waiting patiently for Robwood, when Lefler and Robwood came down to the centerdeck together.

Lefler pointed a heat-gun at Taat.

"Go below and get the irons, Robwood," he said. "Taat, I'm sorry, but I'm arresting you for the murder of Makki."

Taat raised an eyebrow and continued shuffling cards.

"I don't think you want to do anything like that, Robwood," he said mildly. "Do you?"

Robwood hesitated and cast an anxious glance at him, but turned and headed for the companionway to the storage deck.

"You've convinced him, have you, Lefler?" said Taat. "I didn't believe you were guilty, but this makes me think you are."

Lefler said nothing, but held the gun steadily on Taat. Taat appeared relaxed, but Lefler sensed a tension in him.

"What makes you think I did it, Lefler?" sparred Taat. The light glinted from his spectacles as he turned his eyes from Lefler's face to watch the shuffling cards.

"Two things," said Lefler. "If I'd killed him in a half-asleep daze, I wouldn't have put gloves on him to make it look like suicide. Second, your film started at 1500—a strangely precise hour—and Makki was killed before then."

"The first point is good psychology," conceded Taat. "Since Robwood couldn't have done it, I'll admit it looks like suicide. But your second point doesn't hold water. Medical examination is accurate almost to a fine point on the time of death so soon afterward."

"Medical evidence may not lie, but the examiner can, Taat," said Lefler.

The clank of the chains resounded up the companionway. Robwood was coming back. The spring in Taat uncoiled.

With a single sweep, he hurled the deck of cards at Lefler's head and surged upward. Lefler lost his balance and fell sidewise as he dodged the improvised missile. But even as he lost his equilibrium, he pressed the trigger of the heat-gun and brought it downward in a fast chop.

The straps that held Taat to his chair were his doom. The searing beam swept across them, freeing him but at the same time blasting a six-inch swath across his stomach. Taat screamed hoarsely as the beam swung past him and burned along the floor of the centerdeck.

Lefler regained his balance and floated to Taat's side, pushing aside the cards that drifted in a swirling cloud about the room. Robwood appeared from below, the manacles in his hands.

"Your third point wins the day," gasped Taat, his hands writhing over his mangled abdomen. "I won't last long, but if you'll get me to the control room I'll radio a confession that'll clear you and Robwood completely."

"Help me get him to a bunk, Robwood," ordered Lefler, grasping Taat by the arms. "Taat, you'll have to tell us what to do for you."

"No use," groaned Taat. He managed a ghastly smile. "I unbuckled your bunk straps to throw you off course, Lefler, but I don't want you to think I was trying to blame it on you. I was trying to make it look like Makki killed himself."

"But why, Taat?"

"It wasn't just that Makki cheated me," replied Taat with some difficulty. "I'd saved several thousand dollars to build a little clinic in Mars City—something I've dreamed of all my life. That's why I let Makki talk me into investing—I needed just a little more. But the business was almost worthless. He stole most of my money. I was arguing with him about it in the control room, when he drew the gun and threatened to kill me.

He was strapped down. I wrestled with him, and he was killed in the scuffle. That's it."

They maneuvered Taat into a bunk and tried to arrange the straps to avoid the gaping wound in his stomach. Taat raised his hand weakly and removed his spectacles. He blinked up at Lefler.

"I didn't think you knew enough about medicine to tell how long a man had been dead," he said.

"I don't," said Lefler. "But you set the time of Makki's death at 1830 hours. You said you could tell.

"The Earth transit started at 1612, Taat. I've known Makki all my life. If he'd been alive then, he'd have recorded it in the log. And he didn't.

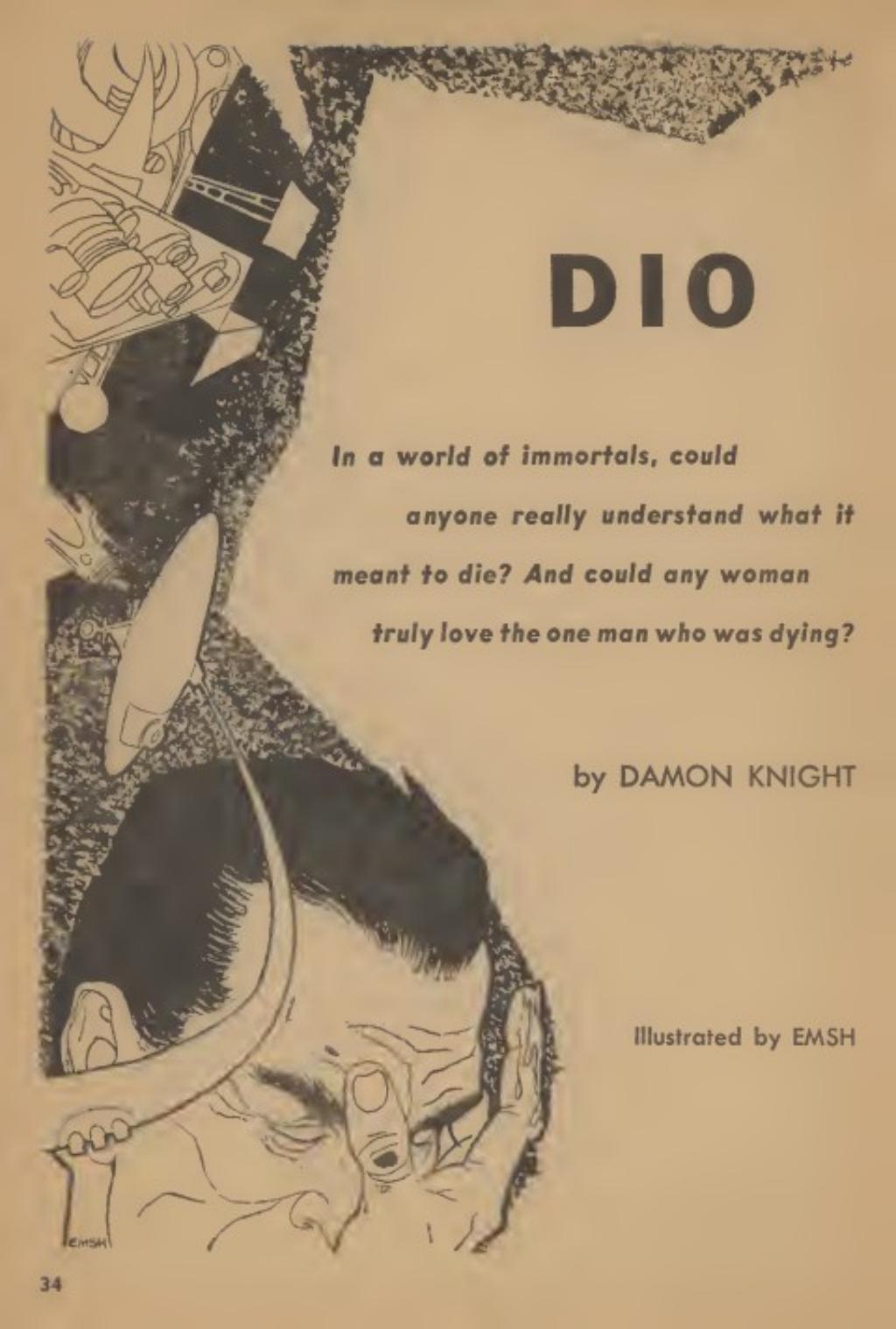
"I just figured the only man who had any reason to lie deliberately about the time of Makki's death was the man who shot him."

Lefler looked at the centerdeck chronometer. It was 2025.

"Do what you can for him, then bring him up to the radio, Robwood," he said. "I've got to get up to the control room and record the midpoint of the Earth transit."

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• The next *Infinity* goes on sale AUGUST 1! •



DIO

*In a world of immortals, could
anyone really understand what it
meant to die? And could any woman
truly love the one man who was dying?*

by DAMON KNIGHT

Illustrated by EMSH

CHAPTER I

IT IS NOON. Overhead the sky like a great silver bowl shimmers with heat; the yellow sand hurls it back; the distant ocean is dancing with white fire. Emerging from underground, Dio the Planner stands blinking a moment in the strong salt light; he feels the heat like a cap on his head, and his beard curls crisply, iridescent in the sun.

A few yards away are five men and women, their limbs glinting pink against the sand. The rest of the seascape is utterly bare; the sand seems to stretch empty and hot for miles. There is not even a gull in the air. Three of the figures are men; they are running and throwing a beach ball at one another, with far-off shouts. The two women are half reclining, watching the men. All five are superbly muscled, with great arched chests, ponderous as Percherons. Their skins are smooth; their eyes sparkle. Dio looks at his own forearm: is there a trace of darkness? is the skin coarsening?

He drops his single garment and walks toward the group. The sand's caress is briefly painful to his feet; then his skin adapts, and he no longer feels it. The five incuriously turn to watch him approach. They are all players, not students, and there are two he does not even



know. He feels uncomfortable, and wishes he had not come. It isn't good for students and players to meet informally; each side is too much aware of the other's good-natured contempt. Dio tries to imagine himself a player, exerting himself to be polite to a student, and as always, he fails. The gulf is too wide. It takes both kinds to make a world, students to remember and make, players to consume and enjoy; but the classes should not mix.

Even without their clothing, these are players: the wide, innocent eyes that flash with enthusiasm, or flicker with easy boredom; the soft mouths that can be gay or sulky by turns. Now he deliberately looks at the blonde woman, Claire, and in her face he sees the same unmistakable signs. But, against all reason and usage, the soft curve of her lips is beauty; the poise of her dark-blond head on the strong neck wrings his heart. It is illogical, almost unheard-of, perhaps abnormal; but he loves her.

Her gray eyes are glowing up at him like sea-agates; the quick pleasure of her smile warms and soothes him. "I'm so glad to see you." She takes his hand. "You know Katha of course, and Piet. And this is Tanno, and that's Mark. Sit here and talk to me, I can't move, it's so hot."

The ball throwers go cheerfully back to their game. The brunette, Katha, begins talking immediately about the choirs at Bethany: has Dio heard them? No? But he must; the voices are stupendous, the choir-master is brilliant; nothing like it has been heard for centuries.

The word "centuries" falls carelessly. How old is Katha—eight hundred, a thousand? Recently, in a three-hundred-year-old journal, Dio has been surprised to find a reference to Katha. There are so many people; it's impossible to remember. That's why the students keep journals; and why the players don't. He might even have met Claire before, and forgotten. . . . "No," he says, smiling politely, "I've been rather busy with a project."

"Dio is an Architectural Planner," says Claire, mocking him with the exaggerated syllables; and yet there's a curious, inverted pride in her voice. "I told you, Kat, he's a student among students. He rebuilds this whole sector, every year."

"Oh," says Katha, wide-eyed, "I think that's absolutely fascinating." A moment later, without pausing, she has changed the subject to the new sky circus in Littlam—perfectly vulgar, but hilarious. The sky clowns! The tumblers! The delicious mock animals!

Claire's smooth face is close to his, haloed by the sun, gilded from below by the reflection of the hot sand. Her half-closed eyelids are delicate and soft, bruised by heat; her pupils are contracted, and the wide gray irises are intricately patterned. A fragment floats to the top of his mind, something he has read about the structure of the iris: ray-like dilating muscles interlaced with a circular contractile set, pigmented with a little melanin. For some reason, the thought is distasteful, and he pushes it aside. He feels a little light-headed; he has been working too hard.

"Tired?" she asks, her voice gentle.

He relaxes a little. The brunette, Katha, is still talking; she is one of those who talk and never care if anyone listens. He answers, "This is our busiest time. All the designs are coming back for a final check before they go into the master integrator. It's our last chance to find any mistakes."

"Dio, I'm sorry," she says contritely. "I know I shouldn't have asked you." Her brows go up; she looks at him anxiously under her lashes. "You should rest, though."

"Yes," says Dio.

She lays her soft palm on the nape of his neck. "Rest, then. Rest."

"Ah," says Dio wearily, letting his head drop into the crook of his arm. Under the sand where he lies are seventeen inhabited levels, of which three are his immediate concern, over a sector that reaches from Alban to Detroi. He has been working almost without sleep for two weeks. Next season there is talk of beginning an eighteenth level; it will mean raising the surface again, and all the force-planes will have to be shifted. The details swim past, thousands of them; behind his closed eyes, he sees architectural tracings, blueprints, code sheets, specifications.

"Darling," says her caressing voice in his ear, "you know I'm happy you came, anyhow, even if you didn't want to. Because you didn't want to. Do you understand that?"

He peers at her with one half-open eye. "A feeling of power?" he suggests ironically.

"No. Reassurance is more like it. Did you know I was jealous of your work? . . . I am, very much. I told myself: If he'll just leave his project, now, today—"

He rolls over, smiling crookedly up at her. "And yet you don't know one day from the next."

Her answering smile is quick and shy. "I know, isn't it awful of me: but *you* do."

As they look at each other in silence, he is aware again of the gulf between them. *They need us*, he thinks, *to make their world over every year—keep it bright and fresh, cover up the past—but they dislike us because they know that whatever they forget, we keep and remember.*

His hand finds hers. A deep, unreasoning sadness wells up in him; he asks silently, *Why should I love you?*

He has not spoken, but he sees her face contract into a rueful, pained smile; and her fingers grip hard.

ABOVE THEM, the shouts of the ball throwers have changed to noisy protests. Dio looks up. Piet, the cotton-headed man, laughing, is afloat over the heads of the other two. He comes down slowly and throws the ball; the game goes on. But a moment later Piet is in the air again: the others shout angrily, and Tanno leaps up to wrestle with him. The ball drops, bounds away: the two striving figures turn and roll in mid-air. At length the cotton-headed man forces the other down to the sand. They both leap up and run over, laughing.

"Someone's got to tame this wild man," says the loser, panting. "I can't do it, he's too slippery. How about you, Dio?"

"He's resting," Claire protests, but the others chorus, "Oh, yes!" "Just a fall or two," says Piet, with a wide grin, rubbing his hands together. "There's lots of time before the tide comes in—unless you'd rather not?"

Dio gets reluctantly to his feet. Grinning, Piet floats up off the sand. Dio follows, feeling the taut surge of back and chest muscles, and the curious sensation of pressure on the spine. The two men circle, rising slowly. Piet whips his body over, head downward, arms slashing for Dio's legs. Dio overleaps him, and, turning, tries for a leg-and-arm; but Piet squirms away like an eel and catches him in a waist lock. Dio strains against the taut chest, all his muscles knotting; the two men hang unbalanced for a moment. Then, suddenly, something gives way in the force that buoys Dio up. They go over together, hard and awkwardly into the sand. There is a surprised babble of voices.

Dio picks himself up. Piet is kneeling nearby, white-faced, holding his forearm. "Bent?" asks Mark, bending to touch it gently.

"Came down with all my weight," says Piet. "Wasn't expecting—" He nods at Dio. "That's a new one."

"Well, let's hurry and fix it," says the other, "or you'll miss

the spout." Piet lays the damaged forearm across his own thighs. "Ready?" Mark plants his bare foot on the arm, leans forward and presses sharply down. Piet winces, then smiles; the arm is straight.

"Sit down and let it knit," says the other. He turns to Dio. "What's this?"

Dio is just becoming aware of a sharp pain in one finger, and dark blood welling. "Just turned back the nail a little," says Mark. "Press it down, it'll close in a second."

Katha suggests a word game, and in a moment they are all sitting in a circle, shouting letters at each other. Dio does poorly; he cannot forget the dark blood falling from his fingertip. The silver sky seems oppressively distant; he is tired of the heat that pours down on his head, of the breathless air and the sand like hot metal under his body. He has a sense of helpless fear, as if something terrible had already happened; as if it were too late.

Someone says, "It's time," and they all stand up, whisking sand from their bodies. "Come on," says Claire over her shoulder. "Have you ever been up the spout? It's fun."

"No, I must get back, I'll call you later," says Dio. Her fingers lie softly on his chest as he kisses her briefly, then he steps away.

"Good-bye," he calls to the others, "good-bye," and turning, trudges away over the sand.

The rest, relieved to be free of him, are halfway to the rocks above the water's edge. A white feather of spray dances from a fissure as the sea rushes into the cavern below. The water slides back, leaving mirror-wet sand that dries in a breath. It gathers itself; far out a comber lifts its green head, and rushes onward. "Not this one, but the next," calls Tanno.

"Claire," says Katha, approaching her, "it was so peculiar about your friend. Did you notice? When he left, his finger was still bleeding."

The white plume leaps, higher, provoking a gust of nervous laughter. Piet dances up after it, waving his legs in a burlesque entrechat. "What?" says Claire. "You must be wrong. It couldn't have been."

"Now, come on, everybody. Hang close!"

"All the same," says Katha, "it was bleeding." No one hears her; she is used to that.

Far out, the comber lifts its head menacingly high; it comes onward, white-crowned, hard as bottle glass below, rising, faster, and as it roars with a shuddering of earth into the cavern, the Immortals are dashed high on the white torrent, screaming their joy. .

Dio is in his empty rooms alone, pacing the resilient floor, smothered in silence. He pauses, sweeps a mirror into being on the bare wall: leans forward to peer at his own gray face, then wipes the mirror out again. All around him the universe presses down, enormous, inexorable.

The time stripe on the wall has turned almost black: the day is over. He has been here alone all afternoon. His door and phone circuits are set to reject callers, even Claire—his only instinct has been to hide.

A scrap of yellow cloth is tied around the hurt finger. Blood has saturated the cloth and dried, and now it is stuck tight. The blood has stopped, but the hurt nail has still not reattached itself. There is something wrong with him; how could there be anything wrong with him?

He has felt it coming for days, drawing closer, invisibly. Now it is here.

It has been eight hours . . . his finger has still not healed itself.

He remembers that moment in the air, when the support dropped away under him. Could that happen again? He plants his feet firmly now, thinks, *Up*, and feels the familiar straining of his back and chest. But nothing happens. Incredulously, he tries again. Nothing!

His heart is thundering in his

chest; he feels dizzy and cold. He sways, almost falls. It isn't possible that this should be happening to him. . . . Help; he must have help. Under his trembling fingers the phone index lights; he finds Claire's name, presses the selector. She may have gone out by now, but sector registry will find her. The screen pulses grayly. He waits. The darkness is a little farther away. Claire will help him, will think of something.

The screen lights, but it is only the neutral gray face of an autosec. "One moment please."

The screen flickers; at last, Claire's face!

"—is a recording, Dio. When you didn't call, and I couldn't reach you, I was very hurt. I know you're busy, but— Well, Piet has asked me to go over to Toria to play skeet polo, and I'm going. I may stay a few weeks for the flower festival, or go on to Rome. I'm sorry, Dio, we started out so nicely. Maybe the classes really don't mix. Good-bye."

The screen darkens. Dio is down on his knees before it. "Don't go," he says breathlessly. "Don't go." His last courage is broken; the hot, salt, shameful tears drop from his eyes.

The room is bright and bare, but in the corners the darkness is gathering, curling high, black as obsidian, waiting to rush.

CHAPTER II

THE CROWDS on the lower level are a river of color, deep electric blue, scarlet, opaque yellow, all clean, crisp and bright. Flower scents puff from the folds of loose garments; the air is filled with good-natured voices and laughter. Back from five months' wandering in Africa, Pacifica and Europe, Claire is delightfully lost among the moving ways of Sector Twenty. Where the main concourse used to be, there is a maze of narrow adventure streets, full of gay banners and musky with perfume. The excursion cars are elegant little baskets of silver filigree, hung with airy grace. She gets into one and soars up the canyon of windows on a long, sweeping curve, past terraces and balconies, glimpse after intimate glimpse of people she need never see again: here a woman feeding a big blue macaw, there a couple of children staring at her from a garden, solemn-eyed, both with ragged yellow hair like dandelions. How long it has been since she last saw a child! . . . She tries to imagine what it must be like, to be a child now in this huge world full of grown people, but she can't. Her memories of her own childhood are so far away, quaint and small, like figures in the wrong side

of an opera glass. Now here is a man with a bushy black beard, balancing a bottle on his nose for a group of laughing people . . . off it goes! Here are two couples obviously kissing. . . . Her heart beats a little faster; she feels the color coming into her cheeks. Piet was so tiresome, after a while; she wants to forget him now. She has already forgotten him; she hums in her sweet, clear contralto, "Dio, Dio, Dio . . ."

On the next level she dismounts and takes a robocab. She punches Dio's name; the little green-eyed driver "hunts" for a moment, flickering; then the cab swings around purposefully and gathers speed.

The building is unrecognizable; the whole street has been done over in baroque facades of vermillion and frost green. The shape of the lobby is familiar, though, and here is Dio's name on the directory.

She hesitates, looking up the uninformative blank shaft of the elevator well. Is he there, behind that silent bulk of marble? After a moment she turns with a shrug and takes the nearest of a row of fragile silver chairs. She presses "3"; the chair whiskers her up, decants her.

She is in the vestibule of Dio's apartment. The walls are faced with cool blue-veined marble. On one side, the spacious oval

of the shaft opening; on the other, the wide, arched doorway, closed. A mobile turns slowly under the lofty ceiling. She steps on the annunciator plate.

"Yes?" A pleasant male voice, but not a familiar one. The screen does not light.

She gives her name. "I want to see Dio—is he in?"

A curious pause. "Yes, he's in.... Who sent you?"

"No one *sent* me." She has the frustrating sense that they are at cross purposes, talking about different things. "Who are you?"

"That doesn't matter. Well, you can come in, though I don't know when you'll get time today." The doors slide open.

Bewildered and more than half angry, Claire crosses the threshold. The first room is a cool gray cavern: overhead are fixed-circuit screens showing views of the sector streets. They make a bright frieze around the walls, but shed little light.

The next room is a huge disorderly space full of machinery carelessly set down; Claire wrinkles her nose in distaste. Down at the far end, a few men are bending over one of the machines, their backs turned. She moves on.

The third room is a cool green space, terrazzo-floored, with a fountain playing in the middle.

Her sandals click pleasantly on the hard surface. Fifteen or twenty people are sitting on the low curving benches around the walls, using the service machines, readers and so on: it's for all the world like the waiting room of a fashionable healer. Has Dio taken up mind-fixing?

Suddenly unsure of herself, she takes an isolated seat and looks around her. No, her first impression was wrong, these are not clients waiting to see a healer, because, in the first place, they are all students—every one.

She looks them over more carefully. Two are playing chess in an alcove; two more are strolling up and down separately; five or six are grouped around a little table on which some papers are spread; one of these is talking rapidly while the rest listen. The distance is too great; Claire cannot catch any words.

Farther down on the other side of the room, two men and a woman are sitting at a hooded screen, watching it intently, although at this distance it appears dark.

Water tinkles steadily in the fountain. After a long time the inner doors open and a man emerges; he leans over and speaks to another man sitting nearby. The second man gets up and goes through the inner doors; the first moves out of sight in the opposite direction.

Neither reappears. Claire waits, but nothing more happens.

No one has taken her name, or put her on a list; no one seems to be paying her any attention. She rises and walks slowly down the room, past the group at the table. Two of the men are talking vehemently, interrupting each other. She listens as she passes, but it is all student gibberish: "the delta curve clearly shows . . . a stochastic assumption . . ." She moves on to the three who sit at the screen.

The screen still seems dark to Claire, but faint glints of color move on its glossy surface, and there is a whisper of sound.

There are two vacant seats. She hesitates, then takes one of them and leans forward under the hood.

Now the screen is alight, and there is a murmur of talk in her ears. She is looking into a room dominated by a huge oblong slab of gray marble, three times the height of a man. Though solid, it appears to be descending with a steady and hypnotic motion, like a waterfall.

Under this falling curtain of stone sit two men. One of them is a stranger. The other—

She leans forward, peering. The other is in shadow; she cannot see his features. Still, there is something familiar about the outlines of his head and body. . . .

She is almost sure it is Dio, but when he speaks she hesitates again. It is a strange, low, hoarse voice, unlike anything she has ever heard before: the sound is so strange that she forgets to listen for the words.

Now the other man is speaking: "—these notions. It's just an ordinary procedure — one more injection."

"No," says the dark man with repressed fury, and abruptly stands up. The lights in that pictured room flicker as he moves, and the shadow swerves to follow him.

"Pardon me," says an unexpected voice at her ear. The man next to her is leaning over, looking inquisitive. "I don't think you're authorized to watch this session, are you?"

Claire makes an impatient gesture at him, turning back fascinated to the screen. In the pictured room, both men are standing now; the dark man is saying something hoarsely while the other moves as if to take his arm.

"Please," says the voice at her ear, "are you authorized to watch this session?"

The dark man's voice has risen to a hysterical shout—hoarse and thin, like no human voice in the world. In the screen, he whirls and makes as if to run back into the room.

"Catch him!" says the other,

lunging after the running form.

The dark man doubles back suddenly, past the other who reaches for him. Then two other men run past the screen; then the room is vacant: only the moving slab drops steadily, smoothly, into the floor.

The three beside Claire are standing. Across the room, heads turn. "What is it?" someone calls.

One of the men calls back, "He's having some kind of a fit!" In a lower voice, to the woman, he adds, "It's the discomfort, I suppose. . . ."

Claire is watching, incomprehendingly, when a sudden yell from the far side of the room makes her turn.

THE DOORS have swung back, and in the opening a shouting man is wrestling helplessly with two others. They have his arms pinned and he cannot move any farther, but that horrible, hoarse voice goes on shouting, and shouting. . . .

There are no more shadows: she can see his face.

"Dio!" she calls, getting to her feet.

Through his own din, he hears her and his head turns. His face gapes blindly at her, swollen and red, the eyes glaring. Then with a violent motion he turns away. One arm comes free, and jerks up to shield his head. He is

hurrying away; the others follow. The doors close. The room is full of standing figures, and a murmur of voices.

Claire stands where she is, stunned, until a slender figure separates itself from the crowd. That other face seems to hang in the air, obscuring his—red and distorted, mouth agape.

The man takes her by the elbow, urges her toward the outer door. "What are you to Dio? Did you know him before?"

"Before what?" she asks faintly. They are crossing the room of machines, empty and echoing.

"Hm. I remember you now—I let you in, didn't I? Sorry you came?" His tone is light and negligent; she has the feeling that his attention is not really on what he is saying. A faint irritation at this is the first thing she feels through her numbness. She stirs as they walk, disengaging her arm from his grasp. She says, "What was wrong with him?"

"A very rare complaint," answers the other, without pausing. They are in the outer room now, in the gloom under the bright frieze, moving toward the doors. "Didn't you know?" he asks in the same careless tone.

"I've been away." She stops, turns to face him. "Can't you tell me? What is wrong with Dio?"

She sees now that he has a thin face, nose and lips keen, eyes bright and narrow. "Nothing you want to know about," he says curtly. He waves at the door control, and the doors slide noiselessly apart. "Good-bye."

She does not move, and after a moment the doors close again. "*What's wrong with him?*" she says.

He sighs, looking down at her modish robe with its delicate clasps of gold. "How can I tell you? Does the verb 'to die' mean anything to you?"

She is puzzled and apprehensive. "I don't know . . . isn't it something that happens to the lower animals?"

He gives her a quick mock bow. "Very good."

"But I don't know what it is. Is it—a kind of fit, like—" She nods toward the inner rooms.

He is staring at her with an expression half compassionate, half wildly exasperated. "Do you really want to know?" He turns abruptly and runs his finger down a suddenly glowing index stripe on the wall. "Let's see . . . don't know what there is in this damned reservoir. Hm. Animals, terminus." At his finger's touch, a cabinet opens and tips out a shallow oblong box into his palm. He offers it.

In her hands, the box lights up; she is looking into a cage in which a small animal crouches—

a white rat. Its fur is dull and rough-looking; something is caked around its muzzle. It moves unsteadily, noses a cup of water, then turns away. Its legs seem to fail; it drops and lies motionless except for the slow rise and fall of its tiny chest.

Watching, Claire tries to control her nausea. Students' cabinets are full of nastinesses like this; they expect you not to show any distaste. "Something's the matter with it," is all she can find to say.

"Yes. It's dying. That means to cease living: to stop. Not to be any more. Understand?"

"No," she breathes. In the box, the small body has stopped moving. The mouth is stiffly open, the lip drawn back from the yellow teeth. The eye does not move, but glares up sightless.

"That's all," says her companion, taking the box back. "No more rat. Finished. After a while it begins to decompose and make a bad smell, and a while after that, there's nothing left but bones. And that has happened to every rat that was ever born."

"I don't believe you," she says. "It isn't like that; I never heard of such a thing."

"Didn't you ever have a pet?" he demands. "A parakeet, a cat, a tank of fish?"

"Yes," she says defensively.

"I've had cats, and birds. What of it?"

"What happened to them?"

"Well—I don't know, I suppose I lost them. You know how you lose things."

"One day they're there, the next, not," says the thin man. "Correct?"

"Yes, that's right. But why?"

"We have such a tidy world," he says wearily. "Dead bodies would clutter it up; that's why the house circuits are programmed to remove them when nobody is in the room. Every one: it's part of the basic design. Of course, if you stayed in the room, and didn't turn your back, the machine would have to embarrass you by cleaning up the corpse in front of your eyes. But that never happens. Whenever you saw there was something wrong with any pet of yours, you turned around and went away, isn't that right?"

"Well, I really can't remember—"

"And when you came back, how odd, the beast was gone. It wasn't 'lost,' it was dead. They die. They all die."

She looks at him, shivering. "But that doesn't happen to people."

"No?" His lips are tight. After a moment he adds, "Why do you think he looked that way? You see he knows; he's known for five months."

She catches her breath suddenly. "That day at the beach!"

"Oh, were you there?" He nods several times, and opens the door again. "Very interesting for you. You can tell people you saw it happen." He pushes her gently out into the vestibule.

"But I want—" she says desperately.

"What? To love him again, as if he were normal? Or do you want to help him? Is that what you mean?" His thin face is drawn tight, arrow-shaped between the brows. "Do you think you could stand it? If so—" He stands aside, as if to let her enter again.

"Remember the rat," he says sharply.

She hesitates.

"It's up to you. Do you really want to help him? He could use some help, if it wouldn't make you sick. Or else— Where were you all this time?"

"Various places," she says stiffly. "Littlam, Paris, New Hol."

He nods. "Or you can go back and see them all again. Which?"

She does not move. Behind her eyes, now, the two images are intermingled: she sees Dio's gorged face staring through the stiff jaw of the rat.

The thin man nods briskly. He steps back, holding her gaze. There is a long suspended moment; then the doors close.

CHAPTER III

THE YEARS fall away like pages from an old notebook. Claire is in Stambul, Winthur, Kumoto, BahiBlanc . . . other places, too many to remember. There are the intercontinental games, held every century on the baroque wheel-shaped ground in Campan: Claire is one of the spectators who hover in clouds, following their favorites. There is a love affair, brief but intense; it lasts four or five years; the man's name is Nord, he has gone off now with another woman to Deya, and for nearly a month Claire has been inconsolable. But now comes the opera season in Milan, and in Tusca, afterwards, she meets some charming people who are going to spend a year in Papeete. . . .

Life is good. Each morning she awakes refreshed; her lungs fill with the clean air; the blood tingles in her fingertips.

On a spring morning, she is basking in a bubble of green glass, three-quarters submerged in an emerald-green ocean. The water sways and breaks, frothily, around the bright disk of sunlight at the top. Down below where she lies, the cool green depths are like mint to the fire-white bite of the sun. Tiny flat golden fishes swarm up to the bubble, turn, glinting like tarnished coins, and flow away

again. The memory unit near the floor of the bubble is muttering out a muted tempest of Wagner: half listening, she hears the familiar music mixed with a gabble of foreign syllables. Her companion, with his massive bronze head almost touching the speakers, is listening attentively. Claire feels a little annoyed; she prods him with a bare foot: "Ross, turn that horrible thing off, won't you please?"

He looks up, his blunt face aggrieved. "It's *The Rhinegold*."

"Yes, I know, but I can't understand a word. It sounds as if they're clearing their throats. . . . Thank you."

He has waved a dismissing hand at the speakers, and the guttural chorus subsides. "Billions of people spoke that language once," he says portentously. Ross is an artist, which makes him almost a player, really, but he has the student's compulsive habit of bringing out these little kernels of information to lay in your lap.

"And I can't even stand four of them," she says lazily. "I only listen to opera for the music, anyhow, the stories are always so foolish; I wonder why?"

She can almost see the learned reply rising to his lips; but he represses it politely—he knows she doesn't really want an answer—and busies himself with the visor. It lights under his fin-

gers to show a green chasm, slowly flickering with the last dim ripples of the sunlight.

"Going down now?" she asks.

"Yes, I want to get those corals." Ross is a sculptor, not a very good one, fortunately, nor a very devoted one, or he would be impossible company. He has a studio on the bottom of the Mediterranean, in ten fathoms, and spends part of his time concocting menacing tangles of stylized undersea creatures. Finished with the visor, he touches the controls and the bubble drifts downward. The waters meet overhead with a white splash of spray; then the circle of light dims to yellow, to lime color, to deep green.

Beneath them now is the coral reef—acre upon acre of bare skeletal fingers, branched and splayed. A few small fish move brilliantly among the pale branches. Ross touches the controls again; the bubble drifts to a stop. He stares down through the glass for a moment, then gets up to open the inner lock door. Breathing deeply, with a distant expression, he steps in and closes the transparent door behind him. Claire sees the water spurt around his ankles. It surges up quickly to fill the airlock; when it is chest high, Ross opens the outer door and plunges out in a cloud of air bubbles.

He is a yellow kicking shape in the green water; after a few moments he is half obscured by clouds of sediment. Claire watches, vaguely troubled; the largest corals are like bleached bone.

She fingers the memory unit for the Sea Pieces from *Peter Grimes*, without knowing why; it's cold, northern ocean music, not appropriate. The cold, far calling of the gulls makes her shiver with sadness, but she goes on listening.

Ross grows dimmer and more distant in the clouding water. At length he is only a flash, a flicker of movement down in the dusky green valley. After a long time she sees him coming back, with two or three pink corals in his hand.

Absorbed in the music, she has allowed the bubble to drift until the entrance is almost blocked by corals. Ross forces himself between them, levering himself against a tall outcropping of stone, but in a moment he seems to be in difficulty. Claire turns to the controls and backs the bubble off a few feet. The way is clear now, but Ross does not follow.

Through the glass she sees him bend over, dropping his specimens. He places both hands firmly and strains, all the great muscles of his limbs and back bulging. After a moment he



straightens again, shaking his head. He is caught, she realizes; one foot is jammed into a crevice of the stone. He grins at her painfully and puts one hand to his throat. He has been out a long time.

Perhaps she can help, in the few seconds that are left. She darts into the airlock, closes and floods it. But just before the water rises over her head, she sees the man's body stiffen.

Now, with her eyes open under water, in that curious blurred light, she sees his gorged face break into lines of pain. Instantly, his face becomes another's—Dio's—vividly seen through the ghost of a dead rat's grin. The vision comes without warning, and passes.

Outside the bubble, Ross's stiff jaw wrenches open, then hangs slack. She sees the pale jelly come bulging slowly up out of his mouth; now he floats easily, eyes turned up, limbs relaxed.

Shaken, she empties the lock again, goes back inside and calls Antibe Control for a rescue cutter. She sits down and waits, careful not to look at the still body outside.

She is astonished and appalled at her own emotion. It has nothing to do with Ross, she knows: he is perfectly safe. When he breathed water, his body reacted automatically: his

lungs exuded the protective jelly, consciousness ended, his heartbeat stopped. Antibe Control will be here in twenty minutes or less, but Ross could stay like that for years, if he had to. As soon as he gets out of the water, his lungs will begin to re-absorb the jelly; when they are clear, heartbeat and breathing will start again.

It's as if Ross were only acting out a part, every movement stylized and meaningful. In the moment of his pain, a barrier in her mind has gone down, and now a doorway stands open.

She makes an impatient gesture, she is not used to being tyrannized in this way. But her arm drops in defeat; the perverse attraction of that doorway is too strong. *Dio*, her mind silently calls. *Dio*.

THE DESIGNER of Sector Twenty, in the time she has been away, has changed the plan of the streets "to bring the surface down." The roof of every level is a screen faithfully repeating the view from the surface, and with lighting and other ingenious tricks the weather up there is parodied down below. Just now it is a gray cold November day, a day of slanting gray rain: looking up, one sees it endlessly falling out of the leaden sky: and down here, although the air is as always pleasantly warm, the

great bare slabs of the building fronts have turned bluish gray to match, and silvery insubstantial streamers are twisting endlessly down, to disappear before they strike the pavement.

Claire does not like it; it does not feel like Dio's work. The crowds have a nervous air, curious, half-protesting; they look up and laugh, but uneasily, and the refreshment bays are full of people crammed together under bright yellow light. Claire pulls her metallic cloak closer around her throat; she is thinking with melancholy of the turn of the year, and the earth turning cold and hard as iron, the trees brittle and black against the unfriendly sky. This is a time for blue skies underground, for flushed skins and honest laughter, not for this echoed grayness.

In her rooms, at least, there is cheerful warmth. She is tired and perspiring from the trip; she does not want to see anyone just yet. Some American gowns have been ordered; while she waits for them, she turns on the fire-bath in the bedroom alcove. The yellow spiky flames jet up with a black-capped *whoom*, then settle to a high murmuring curtain of yellow-white. Claire binds her head in an insulating scarf, and without bothering to undress, steps into the fire.

The flame blooms up around her body, cool and caressing; the

fragile gown flares and is gone in a whisper of sparks. She turns, arms outspread against the flow. Depilated, refreshed, she steps out again. Her body tingles, invigorated by the flame. Delicately, she brushes away some clinging wisps of burnt skin; the new flesh is glossy pink, slowly paling to rose-and-ivory.

In the wall mirror, her eyes sparkle; her lips are liquidly red, as tender and dark as the red wax that spills from the edge of a candle.

She feels a somber recklessness; she is running with the tide. Responsive to her mood, the silvered ceiling begins to run with swift bloody streaks, swirling and leaping, striking flares of light from the bronze dado and the carved crystal lacework of the furniture. With a sudden exultant laugh, Claire tumbles into the great yellow down bed: she rolls there, half smothered, the luxuriant silky fibers cool as cream to her skin; then the mood is gone, the ceiling dims to grayness; and she sits up with an impatient murmur.

What can be wrong with her? Sobered, already regretting the summery warmth of the Mediterranean, she walks to the table where Dio's card lies. It is his reply to the formal message she sent en route: it says simply:

THE PLANNER DIO
WILL BE AT HOME.

There is a discreet chime from the delivery chute, and fabrics tumble in in billows of canary yellow, crimson, midnight blue. Claire chooses the blue, anything else would be out of key with the day; it is gauzy but long-sleeved. With it she wears no rings or necklaces, only a tiara of dark aquamarines twined in her hair.

SHE SCARCELY NOTICES the new exterior of the building; the ascensor shaft is dark and padded now, with an endless chain of cushioned seats that slowly rise, occupied or not, like a disjointed flight of stairs. The vestibule above slowly comes into view, and she feels a curious shock of recognition.

It is the same: the same blue-veined marble, the same mobile idly turning, the same arched doorway.

Claire hesitates, alarmed and displeased. She tries to believe that she is mistaken: no scheme of decoration is ever left unchanged for as much as a year. But here it is, untouched, as if time had queerly stopped here in this room when she left it: as if she had returned, not only to the same choice, but to the same instant.

She crosses the floor reluctantly. The dark door screen looks back at her like a baited trap.

Suppose she had never gone

away—what then? Whatever Dio's secret is, it has had ten years to grow, here behind this unchanged door. There it is, a darkness, waiting for her.

With a shudder of almost physical repulsion, she steps onto the annunciator plate.

The screen lights. After a moment a face comes into view. She sees without surprise that it is the thin man, the one who showed her the rat. . . .

He is watching her keenly. She cannot rid herself of the vision of the rat, and of the dark struggling figure in the doorway. She says, "Is Dio—" She stops, not knowing what she meant to say.

"At home?" the thin man finishes. "Yes, of course. Come in."

The doors slide open. About to step forward, she hesitates again, once more shocked to realize that the first room is also unchanged. The frieze of screens now displays a row of gray-lit streets; that is the only difference; it is as if she were looking into some far-distant world where time still had meaning, from this still, secret place where it has none.

The thin man appears in the doorway, black-robed. "My name is Benarra," he says, smiling. "Please come in; don't mind all this, you'll get used to it."

"Where is Dio?"

"Not far. . . . But we make a rule," the thin man says, "that only students are admitted to see Dio. Would you mind?"

She looks at him with indignation. "Is this a joke? Dio sent me a note . . ." She hesitates; the note was noncommittal enough, to be sure.

"You can become a student quite easily," Benarra says. "At least, you can begin, and that would be enough for today." He stands waiting, with a pleasant expression; he seems perfectly serious.

She is balanced between bewilderment and surrender. "I don't—what do you want me to do?"

"Come and see." He crosses the room, opens a narrow door. After a moment she follows.

He leads her down an inclined passage, narrow and dark. "I'm living on the floor below now," he remarks over his shoulder, "to keep out of Dio's way." The passage ends in a bright central hall from which he leads her through a doorway into dimness.

"Here your education begins," he says. On both sides, islands of light glow up slowly: in the nearest, and brightest, stands a curious group of beings, not ape, not man: black skins with a bluish sheen, tiny eyes peering upward under shelving brows, hair a dusty black. The limbs

are knob-jointed like twigs; the ribs show; the bellies are soft and big. The head of the tallest comes to Claire's waist. Behind them is a brilliant glimpse of tropical sunshine, a conical mass of what looks like dried vegetable matter, trees and horned animals in the background.

"Human beings," says Benarra.

She turns a disbelieving, almost offended gaze on him. "Oh, no!"

"Yes, certainly. Extinct several thousand years. Here, another kind."

In the next island the figures are also black-skinned, but taller—shoulder high. The woman's breasts are limp leathery bags that hang to her waist. Claire grimaces. "Is something wrong with her?"

"A different standard of beauty. They did that to themselves, deliberately. Woman creating herself. See what you think of the next."

She loses count. There are coppery-skinned ones, white ones, yellowish ones, some half naked, others elaborately trussed in metal and fabric. Moving among them, Claire feels herself suddenly grown titanic, like a mother animal among her brood: she has a flash of absurd, degrading tenderness. Yet, as she looks at these wrinkled gnomish faces, they seem to hold

an ancient and stubborn wisdom that glares out at her, silently saying, *Upstart!*

"What happened to them all?"

"They died," says Benarra. "Every one."

Ignoring her troubled look, he leads her out of the hall. Behind them, the lights fall and dim.

The next room is small and cool, unobtrusively lit, unfurnished except for a desk and chair, and a visitor's seat to which Benarra waves her. The domed ceiling is pierced just above their heads with round transparencies, each glowing in a different pattern of simple blue and red shapes against a colorless ground.

"They are hard to take in, I know," says Benarra. "Possibly you think they're fakes."

"No." No one could have imagined those fierce, wizened faces; somewhere, sometime, they must have existed.

A new thought strikes her. "What about *our* ancestors—what were they like?"

Benarra's gaze is cool and thoughtful. "Claire, you'll find this hard to believe. Those were our ancestors."

She is incredulous again. "Those—absurdities in there?"

"Yes. All of them."

She is stubbornly silent a moment. "But you said, they *died*."

"They did; they died. Claire—did you think our race was always immortal?"

"Why—" She falls silent, confused and angry.

"No, impossible. Because if we were, where are all the old ones? No one in the world is older than, perhaps, two thousand years. That's not very long. . . . What are you thinking?"

She looks up, frowning with concentration. "You're saying it happened. But how?"

"It didn't happen. We did it, we created ourselves." Leaning back, he gestures at the glowing transparencies overhead. "Do you know what those are?"

"No. I've never seen any designs quite like them. They'd make lovely fabric patterns."

He smiles. "Yes, they are pretty, I suppose, but that's not what they're for. These are enlarged photographs of very small living things—too small to see. They used to get into people's bloodstreams and make them die. That's bubonic plague—" blue and purple dots alternating with larger pink disks—"that's tetanus—" blue rods and red dots—"that's leprosy—" dark-spotted blue lozenges with a cross-hatching of red behind them. "That thing that looks something like a peacock's tail is a parasitic fungus called *streptothrix actinomyces*. That one—" a particularly dainty de-

sign of pale blue with darker accents—"is from a malignant oedema with gas gangrene."

The words are meaningless to her, but they call up vague images that are all the more horrible for having no definite outlines. She thinks again of the rat, and of a human face somehow assuming that stillness, that stiffness . . . frozen into a bright pattern, like the colored dots on the wall. . . .

SHE IS RESOLVED not to show her revulsion. "What happened to them?" she asks in a voice that does not quite tremble.

"Nothing. The planners left them alone, but changed us. Most of the records have been lost in two thousand years, and of course we have no real science of biology as they knew it. I'm no biologist, only a historian and collector." He rises. "But one thing we know they did was to make our bodies chemically immune to infection. Those things—" he nods to the transparencies above—"are simply irrelevant now, they can't harm us. They still exist—I've seen cultures taken from living animals. But they're only a curiosity. Various other things were done, to make the body's chemistry, to put it crudely, more stable. Things that would have killed our ancestors by toxic reactions—poisoned them—don't

harm us. Then there are the protective mechanisms, and the parapsychical powers that *homo sapiens* had only in potential. Levitation, regeneration of lost organs. Finally, in general we might say that the body was very much more homeostatized than formerly, that is, there's a cycle of functions which always tends to return to the norm. The cumulative processes that used to impair function don't happen—the 'matrix' doesn't thicken, progressive dehydration never gets started, and so on. But you see all these are just delaying actions, things to prevent you and me from dying prematurely. The main thing—" he fingers an index stripe, and a linear design springs out on the wall—"was this. Have you ever read a chart, Claire?"

She shakes her head dumbly. The chart is merely an unaesthetic curve drawn on a reticulated background: it means nothing to her. "This is a schematic way of representing the growth of an organism," says Benarra. "You see here, this up-and-down scale is numbered in one-hundredths of mature weight—from zero here at the bottom, to one hundred per cent here at the top. Understand?"

"Yes," she says doubtfully. "But what good is that?"

"You'll see. Now this other scale, along the bottom, is num-

bered according to the age of the organism. Now: this sharply rising curve here represents all other highly developed species except man. You see, the organism is born, grows very rapidly until it reaches almost its full size, then the curve rounds itself off, becomes almost level. Here it declines. And here it stops: the animal dies."

He pauses to look at her. The word hangs in the air; she says nothing, but meets his gaze.

"Now this," says Benarra, "this long shallow curve represents man as he was. You notice it starts far to the left of the animal curve. The planners had this much to work with: man was already unique, in that he had this very long juvenile period before sexual maturity. Here: see what they did."

With a gesture, he superimposes another chart on the first.

"It looks almost the same," says Claire.

"Yes. Almost. What they did was quite a simple thing, in principle. They lengthened that juvenile period still further, they made the curve rise still more slowly . . . and never quite reach the top. The curve now becomes asymptotic, that is, it approaches sexual maturity by smaller and smaller amounts, and never gets there, no matter how long it goes on."

Gravely, he returns her stare.

"Are you saying," she asks, "that we're *not* sexually mature? Not anybody?"

"Correct," he says. "Maturity in every other complex organism is the first stage of death. We never mature, Claire, and that's why we don't die. We're the eternal adolescents of the universe. That's the price we paid."

"The price . . ." she echoes. "But I still don't see." She laughs. "Not *mature*—" Unconsciously she holds herself straighter, shoulders back.

Benarra leans casually against the desk, looking down at her. "Have you ever thought to wonder why there are so few children? In the old days, loving without any precautions, a grown woman would have a child a year. Now it happens perhaps once in a hundred billion meetings. It's an anomaly, a freak of nature, and even then the woman can't carry the child to term herself. Oh, we *look* mature; that's the joke—they gave us the shape of their own dreams of adult power." He fingers his glossy beard, thumps his chest. "It isn't real. We're all pretending to be grown-up, but not one of us knows what it's really like."

A silence falls.

"Except Dio?" says Claire, looking down at her hands.

"He's on the way to find out. Yes."

"And you can't stop it . . . you don't know why."

Benarra shrugs. "He was under strain, physical and mental. Some link of the chain broke, we may never know which one. He's already gone a long way up that slope—I think he's near the crest now. There isn't a hope that we can pull him back again."

Her fists clench impotently. "Then what good is it all?"

Benarra's eyes are hooded; he is playing with a memocube on the desk. "We learn," he says. "We can do something now and then, to alleviate, to make things easier. We don't give up."

She hesitates. "How long?"

"Actually, we don't know. We can guess what the maximum is; we know that from analogy with other mammals. But with Dio, too many other things might happen." He glances up at the transparencies.

"Surely you don't mean—" The bright ugly shapes glow down at her, motionless, inscrutable.

"Yes. Yes. He had one of them already, the last time you saw him—a virus infection. We were able to control it; it was what our ancestors used to call 'the common cold'; they thought it was mild. But it nearly destroyed Dio—I mean, not the disease itself, but the moral effect. The symptoms were un-

pleasant. He wasn't prepared for it."

She is trembling. "Please."

"You have to know all this," says Benarra mercilessly, "or it's no use your seeing Dio at all. If you're going to be shocked, do it now. If you can't stand it, then go away now, not later." He pauses, and speaks more gently. "You can see him today, of course; I promised that. Don't try to make up your mind now, if it's hard. Talk to him, be with him this afternoon; see what it's like."

Claire does not understand herself. She has never been so foolish about a man before: love is all very well; love never lasts very long and you don't expect that it should, but while it lasts, it's pleasantness. Love is joy, not this wrenching pain.

Time flows like a strong, clean torrent, if only you let things go. She could give Dio up now and be unhappy, perhaps, a year or five years, or fifty, but then it would be over, and life would go on just the same.

She sees Dio's face, vivid in memory—not the stranger, the dark shouting man, but Dio himself, framed against the silver sky: sunlight curved on the strong brow, the eyes gleaming in shadow.

"We've got him full of antibiotics," says Benarra compassionately. "We don't think he'll

get any of the bad ones. . . . But aging itself is the worst of them all. . . . What do you say?"

CHAPTER IV

UNDER THE CURTAIN of falling stone, Dio sits at his workbench. The room is the same as before, the only visible change is the statue which now looms overhead, in the corner above the stone curtain: it is the figure of a man reclining, weight on one elbow, calf crossed over thigh, head turned pensively down toward the shoulder. The figure is powerful, but there is a subtle feeling of decay about it: the bulging muscles seem about to sag; the face, even in shadow, has a deformed, damaged look. Forty feet long, sprawling immensely across the corner of the room, the statue has a raw, compulsive power: it is supremely ugly, but she can hardly look away.

A motion attracts her eye. Dio is standing beside the bench, waiting for her. She advances hesitantly: the statue's face is in shadow, but Dio's is not, and already she is afraid of what she may see there.

He takes her hand between his two palms; his touch is warm and dry, but something like an electric shock seems to pass between them, making her start.

"Claire—it's good to see you.

Here, sit down, let me look." His voice is resonant, confident, even a trifle assertive; his eyes are alert and preternaturally bright. He talks, moves, holds himself with an air of suppressed excitement. She is relieved and yet paradoxically alarmed: there is nothing really different in his face; the skin glows clear and healthy, his lips are firm. And yet every line, every feature, seems to be hiding some unpleasant surprise; it is like looking at a mask which will suddenly be whipped aside.

In her excitement, she laughs, murmurs a few words without in the least knowing what she is saying. He sits facing her across the corner of the desk, commandingly intent.

"I've just been sketching some plans for next year. I have some ideas . . . it won't be like anything people expect." He laughs, glancing down; the bench is covered with little gauzy boxes full of shadowy line and color. His tools lie in disorderly array, solidopens, squirts, calipers. "What do you think of this, by the way?" He points up, behind him, at the heroic statue.

"It's very unusual. . . . Yours?"

"A copy, from stereographs—the original was by Michelangelo, something called 'Evening.' But I did the copy myself."

She raises her eyebrows, not understanding.

"I mean I didn't do it by machine. I carved the stone myself—with mallet and chisel, in these hands, Claire." He holds them out, strong, calloused. It was those flat pads of thickened skin, she realizes, that felt so warm and strange against her hand.

He laughs again. "It was an experience. I found out about texture, for one thing. You know, when a machine melts or molds a statue, there's no texture, because to a machine granite is just like cheese. But when you carve, the stone fights back. Stone has character, Claire, it can be stubborn or evasive—it can throw chips in your face, or make your chisel slip aside. Stone fights." His hand clenches, and again he laughs that strange, exultant laugh.

IN HER APARTMENT late that evening, Claire feels herself confused and overwhelmed by conflicting emotions. Her day with Dio has been like nothing she ever expected. Not once has he aroused her pity: he is like a man in whom a flame burns. Walking with her in the streets, he has made her see the Sector as he imagines it: an archaic vision of buildings made for permanence rather than for change; of masonry set by hand, woods hand-carved and hand-polished. It is a terrifying vision, and yet

she does not know why. People endure; things should pass away. . . .

In the wide cool rooms an air whispers softly. The border lights burn low around the bed, inviting sleep. Claire moves aimlessly in the outer rooms, letting her robe fall, pondering a languorous stiffness in her limbs. Her mouth is bruised with kisses. Her flesh remembers the touch of his strange hands. She is full of a delicious tiredness; she is at the floating, bodiless zenith of love, neither demanding nor regretting.

Yet she wanders restively through the rooms, once idly evoking a gust of color and music from the wall; it fades into an echoing silence. She pauses at the door of the playroom, and looks down into the deep darkness of the diving well. To fall is a luxury like bathing in water or flame. There is a sweetness of danger in it, although the danger is unreal. Smiling, she breathes deep, stands poised, and steps out into emptiness. The gray walls hurtle upward around her: with an effort of will she withdraws the pulse of strength that would support her in midair. The floor rushes nearer, the effort mounts intolerably. At the last minute she releases it; the surge buoys her up in a brief paroxysmal joy. She comes to rest, inches away

from the hard stone. With her eyes dreamily closed, she rises slowly again to the top. She stretches: now she will sleep.

CHAPTER V

FIRST come the good days. Dio is a man transformed, a demon of energy. He overflows with ideas and projects; he works unremittingly, accomplishes prodigies. Sector Twenty is the talk of the continent, of the world. Dio builds for permanence, but, dissatisfied, he tears down what he has built and builds again. For a season all his streets are soaring, incredibly beautiful laceworks of stone; then all the ornament vanishes and his buildings shine with classical purity: the streets are full of white light that shines from the stone. Claire waits for the cycle to turn again, but Dio's work becomes ever more massive and crude; his stone darkens. Now the streets are narrow and full of shadows; the walls frown down with heavy magnificence. He builds no more ascensor shafts; to climb in Dio's buildings, you walk up ramps or even stairs, or ride in closed elevator cars. The people murmur, but he is still a novelty; they come from all over the planet to protest, to marvel, to complain; but they still come.

Dio's figure grows heavier,

more commanding: his cheeks and chin, all his features thicken; his voice becomes hearty and resonant. When he enters a public room, all heads turn: he dominates any company; where his laugh booms out, the table is in a roar.

Women hang on him by droves; drunken and triumphant, he sometimes staggers off with one while Claire watches. But only she knows the defeat, the broken words and the tears, in the sleepless watches of the night.

There is a timeless interval when they seem to drift, without anxiety and without purpose, as if they had reached the crest of the wave. Then Dio begins to change again, swiftly and more swiftly. They are like passengers on two moving ways that have run side by side for a little distance, but now begin to separate.

She clings to him with desperation, with a sense of vertigo. She is terrified by the massive, inexorable movement that is carrying her off: like him, she feels drawn to an unknown destination.

Suddenly the bad days are upon them. Dio is changing under her eyes. His skin grows slack and dull; his nose arches more strongly. He trains vigorously, under Benarra's instruction; when streaks of gray ap-

pear in his hair, he conceals them with pigments. But the lines are cutting themselves deeper around his mouth and at the corners of the eyes. All his bones grow knobby and thick. She cannot bear to look at his hands, they are thick-fingered, clumsy; they hold what they touch, and yet they seem to fumble.

Claire sometimes surprises herself by fits of passionate weeping. She is thin; she sleeps badly and her appetite is poor. She spends most of her time in the library, pursuing the alien thoughts that alone make it possible for her to stay in contact with Dio. One day, taking the air, she passes Katha on the street, and Katha does not recognize her.

She halts as if struck, standing by the balustrade of the little stone bridge. The building fronts are shut faces, weeping with the leaden light that falls from the ceiling. Below her, down the long straight perspective of stair, Katha's little dark head bobs among the crowd and is lost.

The crowds are thinning; not half as many people are here this season as before. Those who come are silent and unhappy; they do not stay long. Only a few miles away, in Sector Nineteen, the air is full of streamers and pulsing with music: the light glitters, people are hurry-

ing and laughing. Here, all colors are gray. Every surface is amorphously rounded, as if mumbled by the sea; here a baluster is missing, here a brick has fallen; here, from a ragged alcove in the wall, a deformed statue leans out to peer at her with its malevolent terra cotta face. She shudders, averting her eyes, and moves on.

A melancholy sound surges into the street, filling it brimfull. The silence throbs; then the sound comes again. It is the tolling of the great bell in Dio's latest folly, the building he calls a "cathedral." It is a vast enclosure, without beauty and without a function. No one uses it, not even Dio himself. It is an emptiness waiting to be filled. At one end, on a platform, a few candles burn. The tile floor is always gleaming, as if freshly damp; shadows are piled high along the walls. Visitors hear their footsteps echo sharply as they enter; they turn uneasily and leave again. At intervals, for no good reason, the great bell tolls.

Suddenly Claire is thinking of the Bay of Napol, and the white gulls wheeling in the sky: the freshness, the tang of ozone, and the burning clear light.

As she turns away, on the landing below she sees two slender figures, hand in hand: a boy and a girl, both with

shocks of yellow hair. They stand isolated; the slowly moving crowd surrounds them with a changing ring of faces. A memory stirs: Claire recalls the other afternoon, the street, so different then, and the two small yellow-haired children. Now they are almost grown; in a few more years they will look like anyone else.

A pang strikes at Claire's heart. She thinks, *If we could have a child....*

She looks upward in a kind of incredulous wonder that there should be so much sorrow in the world. Where has it all come from? How could she have lived for so many decades without knowing of it?

The leaden light flickers slowly and ceaselessly along the blank stone ceiling overhead.

DIO is in his studio, tiny as an ant in the distance, where he swings beside the shoulder of the gigantic, half-carved figure. The echo of his hammer drifts down to Claire and Benarra at the doorway.

The figure is female, seated; that is all they can distinguish as yet. The blind head broods, turned downward; there is something malign in the shapeless hunch of the back and the thick, half-defined arms. A cloud of stone dust drifts free around the tiny shape of Dio; the bitter

smell of it is in the air; the white dust coats everything.

"Dio," says Claire into the annunciator. The chatter of the distant hammer goes on. "Dio."

After a moment the hammer stops. The screen flicks on and Dio's white-masked face looks out at them. Only the dark eyes have life; they are hot and impatient. Hair, brows and beard are whitened; even the skin glitters white, as if the sculptor had turned to stone.

"Yes, what is it?"

"Dio—let's go away for a few weeks. I have such a longing to see Napol again. You know, it's been years."

"You go," says the face. In the distance, they see the small black figure hanging with its back turned to them, unmoving beside the gigantic shoulder. "I have too much to do."

"The rest would be good for you," Benarra puts in. "I advise it, Dio."

"I have too much to do," the face repeats curtly. The image blinks out; the chatter of the distant hammer begins again. The black figure blurs in dust again.

Benarra shakes his head. "No use." They turn and walk out across the balcony, overlooking the dark reception hall. Benarra says, "I didn't want to tell you this just yet. The Planners are going to ask Dio to resign his post this year."

"I've been afraid of it," says Claire after a moment. "Have you told them how it will make him feel?"

"They say the Sector will become an Avoided Place. They're right; people already are beginning to have a feeling about it. In another few seasons they would stop coming at all."

Her hands are clasping each other restlessly. "Couldn't they give it to him, for a Project, or a museum, perhaps—?" She stops; Benarra is shaking his head.

"He's got this to go through," he says. "I've seen it coming."

"I know." Her voice is flat, defeated. "I'll help him . . . all I can."

"That's just what I don't want you to do," Benarra says.

She turns, startled; he is standing erect and somber against the balcony rail, with the gloomy gulf of the hall below. He says, "Claire, you're holding him back. He dyes his hair for you, but he has only to look at himself when he comes down to the studio, to realize what he actually looks like. He despises himself . . . he'll end hating you. You've got to go away now, and let him do what he has to."

For a moment she cannot speak; her throat aches. "What does he have to do?" she whispers.

"He has to grow old, very

fast. He's put it off as long as he can." Benarra turns, looking out over the deserted hall. In a corner, the old cloth drapes trail on the floor. "Go to Napol, or to Timbuk. Don't call, don't write. You can't help him now. He has to do this all by himself."

IN DJUBA she acquires a little ring made of iron, very old, shaped like a serpent that bites its own tail. It is a curiosity, a student's thing; no one would wear it, and besides it is too small. But the cold touch of the little thing in her palm makes her shiver, to think how old it must be. Never before has she been so aware of the funnel-shaped maw of the past. It feels precarious, to be standing over such gulfs of time.

In Winthur she takes the waters, makes a few friends. There is a lodge on the crest of Mont Blanc, new since she was last here, from which one looks across the valley of the Doire. In the clear Alpine air, the tops of the mountains are like ships, afloat in a sea of cloud. The sunlight is pure and thin, with an aching sweetness; the cries of the skiers echo up remotely.

In Cair she meets a collector who has a curious library, full of scraps and oddments that are not to be found in the common supply. He has a baroque fancy

for antiquities; some of his books are actually made of paper and bound in synthetic leather, exact copies of the originals.

"Again, the Alfurs of Poso, in Central Celebes," she reads aloud, "tell how the first men were supplied with their requirements direct from heaven, the Creator passing down his gifts to them by means of a rope. He first tied a stone to the rope and let it down from the sky. But the men would have none of it, and asked somewhat perversely of what use to them was a stone. The Good God then let down a banana, which, of course, they gladly accepted and ate with relish. This was their undoing. 'Because you have chosen the banana,' said the deity, 'you shall propagate and perish like the banana, and your offspring shall step into your place. . . .' " She closes the book. "What was a banana, Alf?"

"A phallic symbol, my dear," he says, stroking his beard, with a pleasant smile.

In Prah, she is caught up briefly in a laughing horde of athletes, playing follow-my-leader: they have volplaned from Omsk to the Baltic, toboganned down the Rose Club chute from Danz to Warsz, cycled from there to Bucur, ballooned, rocketed, leaped from precipices, run afoot all night. She accompanies them to the mountains;

they stay the night in a hostel, singing, and in the morning they are away again, like a flock of swallows. Claire stands grave and still; the horde rushes past her, shining faces, arrows of color, laughs, shouts. "Claire, aren't you coming?" . . . "Claire, what's the matter?" . . . "Claire, come with us, we're swimming to Linz!" But she does not answer; the bright throng passes into silence.

Over the roof of the world, the long cloud-packs are moving swiftly, white against the deep blue. Northward is their destination; the sharp wind blows among the pines, breathing of icy fiords.

Claire steps back into the empty forum of the hostel. Her movements are slow; she is weary of escaping. For half a decade she has never been in the same spot more than a few weeks. Never once has she looked into a news unit, or tried to call anyone she knows in Sector Twenty. She has even deliberately failed to register her whereabouts: to be registered is to expect a call, and expecting one is halfway to making one.

But what is the use? Wherever she goes, she carries the same darkness with her.

The phone index glows at her touch. Slowly, with unaccustomed fingers, she selects the sector, group, and name: Dio.

The screen pulses; there is a long wait. Then the gray face of an autosec says politely, "The registrant has removed, and left no forwarding information."

Claire's throat is dry. "How long ago did his registry stop?"

"One moment please." The blank face falls silent. "He was last registered three years ago, in the index of November thirty."

"Try central registry," says Claire.

"No forwarding information has been registered."

"I know. Try central, anyway. Try everywhere."

"There will be a delay for checking." The blank face is silent a long time. Claire turns away, staring without interest at the living frieze of color which flows along the borders of the room. "Your attention please."

She turns. "Yes?"

"The registrant does not appear in any sector registry."

For a moment she is numb and speechless. Then, with a gesture, she abolishes the autosec, fingers the index again: the same sector, same group; the name: Benarra.

The screen lights: his remembered face looks out at her. "Claire! Where are you?"

"In Cheky. Ben, I tried to call Dio, and it said there was no registry. Is he—?"

"No. He's still alive, Claire;

he's retreated. I want you to come here as soon as you can. Get a special; my club will pay the overs, if you're short."

"No, I have a surplus. All right, I'll come."

"THIS WAS MADE the season after you left," says Benarra. The wall screen glows: it is a stereo view of the main plaza in Level Three, the Hub section: dark, unornamented buildings, like a cliff-dweller's canyon. The streets are deserted; no face shows at the windows.

"Changing Day," says Benarra. "Dio had formally resigned, but he still had a day to go. Watch."

In the screen, one of the tall building fronts suddenly swells and crumbles at the top. Dingy smoke spurts. Like a stack of counters, the building leans down into the street, separating as it goes into individual bricks and stones. The roar comes dimly to them as the next building erupts, and then the next.

"He did it himself," says Benarra. "He laid all the explosive charges, didn't tell anybody. The council was horrified. The integrators weren't designed to handle all that rubble—it had to be amorphized and piped away in the end. They begged Dio to stop, and finally he did. He made a bargain with them, for Level One."

"The whole level?"

"Yes. They gave it to him; he pointed out that it would not be for long. All the game areas and so on up there were due to be changed, anyhow; Dio's successor merely canceled them out of the integrator."

She still does not understand. "Leaving nothing but the bare earth?"

"He wanted it bare. He got some seeds from collectors, and planted them. I've been up frequently. He actually grows cereal grain up there, and grinds it into bread."

In the screen, the canyon of the street has become a lake of dust. Benarra touches the controls; the scene shifts.

The sky is a deep luminous blue; the level land is bare. A single small building stands up blocky and stiff; behind it there are a few trees, and the evening light glimmers on fields scored in parallel rows. A dark figure is standing motionless beside the house; at first Claire does not recognize it as human. Then it moves, turns its head. She whispers, "Is that Dio?"

"Yes."

She cannot repress a moan of sorrow. The figure is too small for any details of face or body to be seen, but something in the proportions of it makes her think of one of Dio's grotesque statues, all stony bone, hunched,

shrunken. The figure turns, moving stiffly, and walks to the hut. It enters and disappears.

She says to Benarra, "Why didn't you tell me?"

"You didn't leave any word; I couldn't reach you."

"I know, but you should have told me. I didn't know . . ."

"Claire, what do you feel for him now? Love?"

"I don't know. A great pity, I think. But maybe there is love mixed up in it too. I pity him because I once loved him. But I think that much pity is love, isn't it, Ben?"

"Not the kind of love you and I used to know anything about," says Benarra, with his eyes on the screen.

HE WAS WAITING for her when she emerged from the kiosk.

He had a face like nothing human. It was like a turtle's face, or a lizard's: horny and earth-colored, with bright eyes peering under the shelf of brow. His cheeks sank in; his nose jutted, and the bony shape of the teeth bulged behind the lips. His hair was white and fine, like thistle-down in the sun.

They were like strangers together, or like visitors from different planets. He showed her his grain fields, his kitchen garden, his stand of young fruit trees. In the branches, birds were



fluttering and chirping. Dio was dressed in a robe of coarse weave that hung awkwardly from his bony shoulders. He had made it himself, he told her; he had also made the pottery jug from which he poured her a clear tart wine, pressed from his own grapes. The interior of the hut was clean and bare. "Of course, I get food supplements from Ben, and a few things like needles, thread. Can't do everything, but on the whole, I haven't done too badly." His voice was abstracted; he seemed only half aware of her presence.

They sat side by side on the wooden bench outside the hut. The afternoon sunlight lay pleasantly on the flagstones; a little animation came to his withered face, and for the first time she was able to see the shape of Dio's features there.

"I don't say I'm not bitter. You remember what I was, and you see what I am now." His eyes stared broodingly; his lips worked. "I sometimes think, why did it have to be me? The rest of you are going on, like children at a party, and I'll be gone. But, Claire, I've discovered something. I don't quite know if I can tell you about it."

He paused, looking out across the fields. "There's an attraction in it, a beauty. That sounds impossible, but it's true. Beauty in the ugliness. It's symmetrical, it

has its rhythm. The sun rises, the sun sets. Living up here, you feel that a little more. Perhaps that's why we went below."

He turned to look at her. "No, I can't make you understand. I don't want you to think, either, that I've surrendered to it. I feel it coming sometimes, Claire, in the middle of the night. Something coming up over the horizon. Something—" He gestured. "A feeling. Something very huge, and cold. Very cold. And I sit up in my bed, shouting, 'I'm not ready yet!' No. I don't want to go. Perhaps if I had grown up getting used to the idea, it would be easier now. It's a big change to make in your thinking. I tried—all this—and the sculpture, you remember—but I can't quite do it. And yet—now, this is the curious thing. I wouldn't go back, if I could. That sounds funny. Here I am, going to die, and I wouldn't go back. You see, I want to be myself; yes, I want to go on being myself. Those other men were not me, only someone on the way to be me."

They walked back together to the kiosk. At the doorway, she turned for a last glimpse. He was standing, bent and sturdy, white-haired in his rags, against a long sweep of violet sky. The late light glistened grayly on the fields; far behind, in the grove of trees the birds' voices were

stilled. There was a single star in the east.

To leave him, she realized suddenly, would be intolerable. She stepped out, embraced him: his body was shockingly thin and fragile in her arms. "Dio, we mustn't be apart now. Let me come and stay in your hut; let's be together."

Gently he disengaged her arms and stepped away. His eyes gleamed in the twilight. "No, no," he said. "It wouldn't do, Claire. Dear, I love you for it, but you see . . . you see, you're a goddess. An immortal goddess—and I'm a man."

She saw his lips work, as if he were about to speak again, and she waited, but he only turned, without a word or gesture, and began walking away across the empty earth: a dark spindling figure, garments flapping gently in the breeze that spilled across the earth. The last light glowed dimly in his white hair. Now he was only a dot in the middle distance. Claire stepped back into the kiosk, and the door closed.

CHAPTER VI

FOR A LONG TIME she cannot persuade herself that he is gone. She has seen the body, stretched in a box like someone turned to painted wax: it is not Dio, Dio is somewhere else.

She catches herself thinking, *When Dio comes back . . .* as if he had only gone away, around to the other side of the world. But she knows there is a mound of earth over Sector Twenty, with a tall polished stone over the spot where Dio's body lies in the ground. She can repeat by rote the words carved there:

Weak and narrow are the powers implanted in the limbs of men; many the woes that fall on them and blunt the edges of thought; short is the measure of the life in death through which they toil. Then are they borne away; like smoke they vanish into air; and what they dream they know is but the little that each hath stumbled upon in wandering about the world. Yet boast they all that they have learned the whole. Vain fools! For what that is, no eye hath seen, no ear hath heard, nor can it be conceived by the mind of man.

—Empedocles
(5th cent. B. C.)

One day she closes up the apartment; let the Planner, Dio's successor, make of it whatever he likes. She leaves behind all her notes, her student's equipment, useless now. She goes to a public inn, and that afternoon the new fashions are brought to

her: robes in flame silk and in cold metallic mesh; new perfumes, new jewelry. There is new music in the memory units, and she dances to it tentatively, head cocked to listen, living into the rhythm. Already it is like a long-delayed spring; dark withered things are drifting away into the past, and the present is fresh and lovely.

She tries to call a few old friends. Katha is in Centram, Ebert in the South; Piet and Tanno are not registered at all. It doesn't matter; in the plaza of the inn, before the day is out, she makes a dozen new friends. The group, pleased with itself, grows by accretion; the resulting party wanders from the plaza to the Vermilion Club gardens, to one member's rooms and then another, and finally back to Claire's own apartment.

Leaving the circle toward midnight, she roams the apartment alone, eased by comradeship, content to hear the singing blur and fade behind her. In the playroom, she stands idly looking down into the deep darkness of the diving well. How luxurious, she thinks, to fall and fall, and never reach the bottom. . . .

But the bottom is always there, of course, or it would not be a diving well. A paradox: the well must be a shaft without an exit at the bottom; it's the sense of danger, the imagined smash-

ing impact, that gives it its thrill. And yet there is no danger of injury: levitation and the survival instinct will always prevent it.

"We have such a tidy world. . . ."

Things pass away; people endure.

Then where is Piet, the cottony haired man, with his daughter and his wild jokes? Hiding, somewhere around the other side of the world, perhaps; forgetting to register. It often happens; no one thinks about it. But then, her own mind asks coldly, where is the woman named Marla, who used to hold you on her knee when you were small? Where is Hendry, your own father, whom you last saw . . . when? Five hundred, six hundred years ago, that time in Rio. Where do people go when they disappear . . . the people no one talks about?

The singing drifts up to her along the dark hallway. Claire is staring transfixed down into the shadows of the well. She thinks of Dio, looking out at the gathering darkness: "I feel it coming sometimes, up over the horizon. Something very huge, and cold."

The darkness shapes itself in her imagination into a gray face, beautiful and terrible. The smiling lips whisper, for her ears alone, *Some day.*

∞ ∞

by HARLAN ELLISON
and ALGIS BUDRYS



WONDERBIRD

Illustrated by
BOWMAN



bowman

Wonderbird

by Harlan Ellison and Algis Budrys

Illustrated by BOWMAN

TIME AND AGAIN the fire had burned down in the fireplace-bowl, and the night had come too close. The cave had flickered dully with the dying light of the fire, and they had shivered.

Skilton had cuffed the younglings out into the edge of the dark, to glean the fallen dead arms of the trees, to bring the fire to life again. But the younglings were awkward, and slow, and fearful of the waiting night. And the fuel was scanty. The darkness was close, and death with it. As emcee of the tribe, Skilton had been forced to use ruthlessness to spur them outward.

We should never have come into this place, Skilton thought. *We should have stayed in the valleys of our birth, where the trees are many and the death is thin.*

His thoughts were abruptly interrupted by an answering, inquiring thought from Lahr, one of the lesser members of the tribe.

But, emcee, why have we come to this place?

Skilton's massive head turned on his hairy neck, and he stared deeply into the wide, double-pupiled eyes of Lahr. *It is the Time of the Prophecy,* he answered almost angrily. They were supposed to know that. Things were different in the tribe today. Before, there were many stryte-min, who would ask him intelligent questions, such as *Why does a bulfee cross the forest track?* or *Who was that she-tribe-member I sensed you with the past darkening?*

But now many of the old ones had had the death thicken in them, and they had gone away. The younglings were impudent, and their religion was a small thing to them.

But how do you know this is the Time of Prophecy? Lahr insisted. He scratched his long muzzle with his right second paw.

Skilton rose up in wrath, and towered over the smaller tribier. *Fool!* he thought violently. *Don't you remember the words:* "Never worry and never fear, your boy Alfie Gunsel's here! I'll be back when the moons climb be-

Skilton knew the Prophecy was right, and

the laugh would be on those who scoffed.

The Lams would play the Palace once more!

hind the clouds!" This is that Time. This is the Time when the five moons have gone to counsel behind the swirlers, and the Performances will begin anew. The Lams will play the Palace once more!

His thoughts had risen in violence as he had gone on, and now the words reverberated in the heads of the tribe. Skilton and his religion! They believed, of course, but, well . . .

He didn't have to go *this* far: drag them from their burrows and send them halfway across the Palace to this spot of desolation on the edge of the silver-sanded plain and the Great Mountain.

But—they were trapped here by the dark, and it was too late for second thoughts. They would have to wait out Skilton's time of madness, till he realized the old religion was hoax, and there was no Time of the Prophecy.

Up above them, just past the peak of the Great Mountain, fire split the sky.

The darkness shuddered, and Skilton leaped to his feet, staring.

Above the mountain, a shiny bird was glowing. Golden, thundering, flickering, shuddering, the Wonderbird beat its way downward on its blazoned wings. And Skilton saw the dark turn into light, the death retreat before the beat of heated wings, and then the younglings were huddled behind him as he lifted his thoughts in prayer. In a moment the rest of the tribe had murmured *We believe, we believe!* in their minds, and were joining him in the singing chords of the Tophatt ritual:

June; the tune I croon to spoon—

A loon too goony in the moon Light—

You.

Is only lonely in this homely Phony though baloney may be Bright—

Blue

Mood.

They huddled on their triple-jointed knees a few moments more, letting the harmony tingle away in their minds, then Skilton was up and running. Again, the younglings were huddled behind him as he ran away from

the cave, and the needless fire, toward the rocking Wonderbird.

SKILTON'S switch-antennae rose and quivered as he homed in on the Wonderbird. He thought a spark at the younglings, for they had always believed in him. The older tribes he left to their own resources—they would find the Wonderbird in time.

Hurry! This is the Time we have waited to witness!

And the younglings spurred themselves, their eight triple-jointed legs spinning beneath them as they strove to keep up with the old emcee. Somehow, he had drawn a reserve of sudden energy for the task, and was even outloping them. They left the rest of the tribe behind quickly.

They covered the moss-ground rapidly, moved toward the silver-sanded plain. Long, loping strides, and the Wonderbird came closer.

Skilton brought them to a halt at the edge of the silver-sanded plain. He looked back, far up the slope of the foothills, and saw the moving dots of the rest of the tribe. He would not wait for them—let them arrive in their own time. *He* had been true to the Lams, and he would be their first greeter. He would become their aide—and all the long years of belief would be

paid back in full measure.

Yet, he did not venture onto the silver-sanded plain.

There was no sense being foolhardy about this.

The Time! Yes; but perhaps not as they had been told in the Prophecy. Perhaps it might be different, the Prophecy and its meaning garbled by time. He must deal with caution.

Was he not emcee of the tribe?

The Wonderbird lay there, its many-colored flesh flickering. Blue, red, gold, amber, back to gold, and flowing, always flowing. Then—

Sput! Peeeee-op!

Little bunches of many-colored brightness erupted from the Wonderbird's skin.

It continued for a few minutes, and suddenly the skin of the Wonderbird sucked inward and a round hole appeared. A black hole, from which a long tongue extended that went down to the silver sands.

Then a—a—thing?—leaped out of the Wonderbird, ran down the long extended tongue, and stood on the silver sands, with its paws on its hips, staring at the Wonderbird.

"Goddam, stinkin', miserable electrical system!" the thing exploded. The words were in the air.

Skilton's antennae spun aloft. In the air? Not in the head, like

the tribe's thoughts, but on the air, like the screams of the ignorant hulfee they cut and ate? In the air? Yes, by Go-Bell! In the air. This thing was not of their world, not of the Telling of the Prophecy, not even of the dreams that stole warmly in the night. This was . . . strange. He could thought-pluck no word that meant more. Strange.

The thing was ripping a wire from a hole in the skin of the Wonderbird. Skilton tuned in on the thing's mind, and there were thoughts! In addition to the sounds in the air, there were thoughts. How strange!

He knew at once the wire was a "master electrical connection to the power banks of the skin displays" and the hole was a "repair cubby" but he could not decide what they were for. But they had to be for something, since he remembered the prime Lewus rule: Always build to your point. Never miss a step. Never do anything meaningless, and then hit 'em with the boffola!

The thing closed a piece of skin over the skin, and the popping, erupting, noisy clash of exploding colors ceased.

"That oughtta fix the goddam thing," the thing said, looking with an odd expression at the skin. He radiated pleasure.

What? thought the secondary youngling, a calf-pup named Culonah.

Silence, Impertinence! Skilton tossed back instantly, scathingly. This is a blessed Lam! Never doubt them, never question them, never let your thoughts rise in objection, for they are all-powerful and may strike you. Death will thicken in your tongue, if you do not heed what I say!

But—Skilton . . .

Silence, youngling! Do you want me to give you the Bird? The Wonderbird?

THE Bird, fool!

The youngling retreated, cringing.

SKILTON's words were brave, and trusting of the Lams. Yet his thoughts could not help but be colored with doubt. He fought to submerge these unworthy feelings—the younglings must never doubt for an instant. If they did, the Performances would never come again. He was not quite certain what the Performances were—but they boasted a golden age for everyone on The Palace. He must deep-thrust his unworthy feelings, both for himself, for the younglings, and for the doubting, corroded-minded older tribers loping down the foothills toward them.

He looked back at the Wonderbird, as a blast of thought and sound struck him.

The thing was leaning through the skin of the Wonder-

bird, at the top of the reaching tongue that stretched to the sand. He was calling—words still in the air. . . .

"Marge! Yo, Marge! Come on out; we got us an audience, awreddy!"

He turned and looked back over his shoulder at Skilton and the calf-pups. Skilton knew it was his head, knew it was his shoulder, simply enough. The thing thought.

Then why the words in the air?

Another thing came from the Wonderbird. It was a she; the first thing identified it as a she. She stopped at the top of the reaching tongue (her thoughts called it a ramp) and looked at the flickering, color-changing skin.

She looked at the odd squiggles that formed the shapes:
MARGE AND ANDY PETERBOB!
COMEDIANS EXTRAORDINAIRE!
and in smaller squiggles:

HAVE TUX, TRAVEL

She opened her mouth wide (yawn, the first thing thought it). She scratched with one of her two paws at the space under her left arm. "Fix it?" she asked.

"What the hell's it look like?" he answered.

"Cute, cute. Alla time with the wide-eyed, wise answers." Her face grew annoyed—her thoughts grew annoyed. "Well, where's the marks?"

The first thing pointed toward Skilton and the calf-pups on the edge of the plain.

"There they be, me sweet young pretty. There they be."

She let her eyes follow his hand. Her eyes grew larger.

"Them? Them things? That's what we're gonna play to?"

He shrugged. "Why not?"

"You use the civilcometer? Check if there's any culture?"

He nodded. "Not a trace of a city. If there's life here, that's it."

She let her tongue lick her lower lip. "You sure this is the planet?"

He pulled a sheaf of odd, thin skin from a hole in his own skin, and unfolded it. He ran a finger down a column, said to her: "The record says a show-ship came by here in '27 . . . gave three hundred consecutive performances. Carted off a whole shipful of raw *sogoth* fiber. They called the place The Palace. Must be . . . only planet on these co-ords."

She gave him a rueful look as he folded the skin away into his own baggy hide.

"I ain't doing my act for them shaggy lap-dogs!"

"Aw, Marge, for chrisakes, we done our act before worse than this. Them three-eyed slugs on Doopassa—or them little spike-balls on Garrity's Hell—or them—"

She cut him off with a wave of her hand, sharp and final.
"No!"

"Aw, Marge, for chrisakes, you gotta at least test 'em. You gotta see if maybe they ain't intelligent."

She screwed her face up horribly. "Take a look at the damned things—you can *see* they ain't nothin' but eight-legged mutts!"

At this point, Skilton felt things had advanced poorly enough. He sensed the rest of the tribe loping in behind them. Now was the moment for him to make his appeal to his gods, to the Lams who had come at last.

All the years of waiting and believing, of suffering the abuse of those who were unfaithful, were about to reach fruition. He would be the chosen of these great god Lams.

He let words float on the air.

The bellow welled up in his throat, coursed through his amplifier-baffle vocal cords, and erupted in the dusk.

"Bah-roooooooooooooo!"

THE SHE-THING leaped into the air, and came down trembling, her eyes even larger.

"Ta hell with you," she squawked oddly. "That goddam thing wants me for supper. Uh-uh. Goo'bye!"

The first thing was turned to

ward Skilton, also. His eyes were as large as the she's. His mouth fluttered. But his thoughts said they must stay.

"But, look, Marge honey, you gotta . . . don't let a little moan like that bother ya . . . uh . . . we're out *this* far, honey, we gotta bring *somethin'* back . . . pay the costs . . ."

She started to say something, then her thoughts said: *What's the use? I'm gettin' the hell outta here!*

"Honey . . . it's been a real slack season, we gotta . . ."

She reached inside the Wonderbird's skin, pulled out an odd square thing, and threw it at the he-thing. It hit him on the head.

"Goddamit, Marge, why'd ya toss that at me? You know it's part of the last borrow from that library-ship! It ain't ours! Aw, come on, Marge! We gotta . . ."

"We don't gotta do nothin'! And if you don't wanna get left standin' right there with egg on ya kisser, ya better haul-tail in here and help me blast! I wanna go!"

She stared at him hard for a moment, casting strange looks every few seconds at Skilton and the group of younglings. At that moment, the rest of the tribe appeared out of the foothills and fell in, hushed, behind the emcee.

"Yaarghh!" she bellowed.

till it made Skilton's antennae twitch. She bolted inside the Wonderbird, waving her arms in the air.

The he-thing cursed, and looked over his shoulder. When he saw the group in the moss-edge of the sanded plain had grown, his mouth flapped oddly, too, and he stumbled clankingly up the ramp.

His thoughts flowed and broiled in his head; the words rolled and burnt in the air.

He got into the Wonderbird, and they heard sounds on sounds, and the skin fastened tight to the rest of the skin.

They watched as the flickering colors dimmed, and the beating noises burst from the back of the Wonderbird. They let the primary lids slide over their eyes as the fire ripped from the Wonderbird. And then they watched terrified as it swept into the air, and left.

It blossomed and flickered and ticked and colored its way back over the Great Mountain, up toward the swirlers, and out of sight.

SKILTON watched it with mixed feelings.

It was going, and with it was going the entire floor of his beliefs. His religion, his thoughts, his very being had been sundered by the dusk's happenings.

The Lams were *not* gods. They had *not* come again to do the Performances. They would *not* play The Palace again.

This was the end.

He kept the thoughts below scanning-level, so the tribe might not know what he thought. He felt their unease, and they waited for his explanation. How could he tell them the truth; that there *was* no Performance, and that all the years of waiting for the Time of the Prophecy were in vain? How could he tell them he had been deceived? How? How?

He began to summon the thoughts from their lower-level home, when he stopped, and forced them back down, keeping the surface of his mind clear and untroubled.

He saw the square thing on the silver-sanded plain: lying where the he-thing had let it fall, where the she had thrown it. Perhaps in that square thing there might be a clue to help him. A sign, a symbol, an omen to reinstate his belief in the Lams once more.

Skilton? The thoughts swam toward him from the awed tribe.

Skilton, tell us, oh worthy and far-seeing emcee, what does all this mean? Was this the Performance?

He could only answer: *Come. And they followed him . . .*

Followed him off the moss-ground, away from the Great Mountain, onto the silver-sanded plain, and toward the square thing. There they stopped and looked and thought.

After a great long while, they asked Skilton, and he told them, and they knew it was true, for they could see the square thing.

After a great while, they knew.

There was another thing. This was *not* the end. There would be a new beginning.

A new way of life—a new era.

When they got back to the home of their births, they would discard the old Tophatt rituals, and the Jomillr-joaks, and the

new life would flower for them—and this time there would be no doubting, for they had all seen the Wonderbird.

Skilton lowered his massive head and picked up the square thing in his toothless mouth. He trotted back toward the foot-hills and the Great Mountain.

The younglings followed quickly, and the tribe followed them, and there were no lagards, for they were all trying to reason out the meaning of the squiggles that declared the new truth—the squiggles that described the new religion.

The squiggles that said:
THE COMPLETE WORKS OF
THE MARQUIS DE SADE
(ILLUSTRATED)

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INVITATION TO LONDON

It's almost convention time again. This year, the 15th World Science Fiction Convention will be held at the King's Court Hotel, Leinster Gardens, Bayswater, London, England. All readers of INFINITY are cordially invited to attend by the committee, and urged to do so if possible by the staff. This should turn out to be one of the pleasantest and most worthwhile affairs yet in the science fiction field, and the trip to London can be an exciting adventure in its own right.

Membership in the World Science Fiction Society, which sponsors the convention, is only one dollar; in return, you'll receive complete details of plans and program. Address the Convention Secretary, 204 Wellmeadow Road, Catford, London S.E.6.

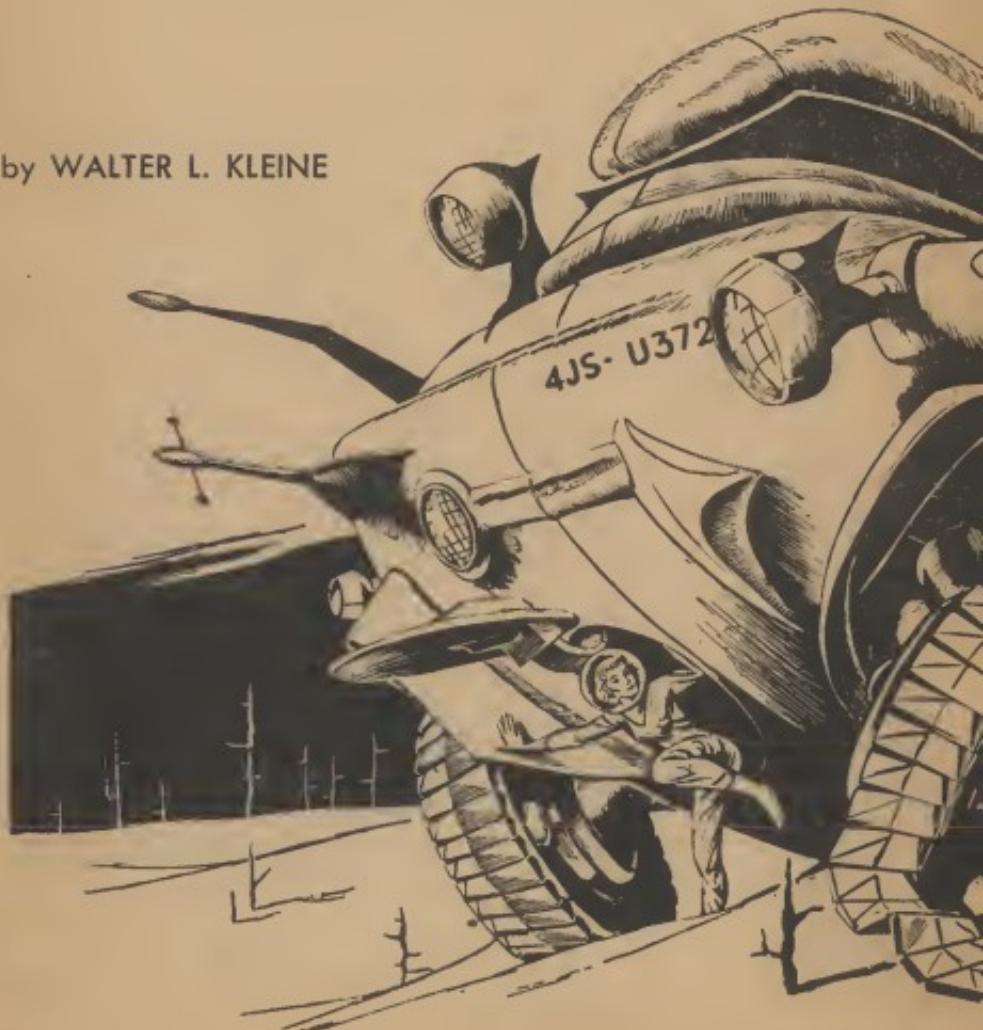
DEADLINE

They had 70 days to prepare a landing

strip. Physically, it was impossible.

Psychologically, it was even worse!

by WALTER L. KLEINE



HELENE DONNELLY handed me a cup of coffee, but didn't pour one for herself. I could feel her eyes on me as I drank.

Finally she said, "For God's sake, Marsh, you *could* say something."

I could. Yeah. As the implications penetrated, the coffee slopped over the rim of the cup. I emptied it quickly and gave it back to her. "How about a refill?"

She refilled it and gave it back to me. "If we haven't got a

Illustrated by SCHOENHERR



chance," she said slowly, "I've got as much right to know as you do. Marsh, have we got any chance?"

I set the coffee down and stood up. I shrugged and spread my hands. "Ask me that seventy days from now, if you're still around to ask, and I'm still around to answer. Then maybe I can tell you 'yes.' Right now, I just don't know. *This* wasn't included in the plans!"

She didn't answer. I walked forward and stared out over the crushed cab at the blue-white CO₂ ice of the Martian north polar cap.

Seventy days. That was the deadline—the physical deadline. It really didn't matter too much. Mechanically, we'd either make it to the equator and carve out a landing strip for the other two ships, or we wouldn't.

We might make that deadline and still miss the other one. The psychological one.

My wife was dead. So was Helene's husband. So were the Travises and the Leonards.

That left just me and Helene, and according to the reasonably well-proven theories of space-crew psychology, she would have to replace my wife and I her husband. It was supposed to be easy, since we wouldn't have been in the same crew if we weren't known to be more compatible than ninety-nine and

nine-tenths percent of the world's married couples.

I pictured her in my mind and tried to superimpose "wife" on the image. It didn't work. I gave it up. Maybe later; it had all happened so fast. . . .

FOUR DAYS AGO, the eight ships of Joint Martian Expedition One had gone into orbit around Mars.

Four men and four women in each ship; forty of the most stable marriages discoverable at the present state of the research which had resulted in using the "stabilizing influence" of marriage to stabilize space crews.

Three of those ships were equipped with the streamlined nose-shells and wings necessary to make actual landings on Mars. Number One, my ship, was supposed to make the first landing, on skis, near the edge of the north polar cap. We carried a pair of double-unit sand-tractors, each of which had quarters for four in the front section and carried a featherweight bulldozer on the trailer.

We were supposed to report a safe landing by radio, proceed overland to the equator, and carve out a landing strip, in seventy days. If the radio didn't work, we were to touch off the remaining fuel in our tanks, after we had everything clear of the blast area.

WALTER L. KLEINE is doing graduate journalism work at the University of Iowa. He reports that the courses in current magazine practice, magazine article writing, and magazine fiction writing keep him so busy that he has hardly any time left to write science fiction. We think Kleine is one of tomorrow's big name writers; and in Deadline he takes a new and individual approach to the old problem of setting up the first Mars base.

Right now, a mile or so behind us, the drives and fuel tanks of Number One were sending merging columns of smoke high into the thin Martian air. A magnificent signal.

Only we hadn't touched them off.

And they couldn't have ignited on contact and still be going like that. They couldn't have gone much before Helene and I came to, about seven hours after we hit.

About half a mile in front of us one of the bulldozers lay on its side, a short distance from the wreck of the nose section, slashed open where the tractor had come through it diagonally, missing Helene and myself by inches. The 'dozer, the wingtips, and the tractor unit, which we had climbed into, were the only things left remotely intact.

It was a real, genuine, gold-plated miracle.

I didn't know how it had happened, or why. It occurred at the first shock of landing, and that was the last either of us remembered. Maybe one of the skis collapsed. Maybe one of the

drives surged when I cut it back. Maybe there was a rock hidden under the ice. Maybe the ice wasn't thick enough. Maybe a lot of things. We'd never know.

It was small comfort to be sure that according to both the instruments and the seat of my pants there was nothing wrong with my piloting.

That didn't matter. Sixty more people would very probably die if we didn't do the probably impossible. The other two ships wouldn't have enough fuel to pull up and get back in orbit if they came down and discovered that the landing strip wasn't there.

"So now what?" Helene finally broke the long silence. "We've looked around and picked up enough pieces to maybe get us there. You're the boss; you know how you want to do it, but I've got to help you. How about letting me in on the secret?"

I swore silently at the guy who had decided that the younger half of the crews should be conditioned to look to the older half for leadership in

emergencies. In space you don't want leadership; you want co-ordination and automatic cooperation. "Okay," I said, not turning, "I'll tell you. But are you sure you'd rather not remain in blissful ignorance?" I regretted the sarcasm instantly.

"I'm old enough to know the facts of death."

"I'll take your word for it, kid. Hell, you already know. Six thousand miles. Seventy days. With just two of us, it'll probably take thirty of them to hack out a strip. It's simple arithmetic."

"I know that, Marsh, but what do we *do* about it?"

"Get some sleep. Then we'll pick up what pieces we can find and jury rig anything we can't find pieces of. When we find out how much fuel we've got, we can figure out how fast we dare travel. We should be able to find all we can carry; the tanks were self-sealing. When we're sure we've got it all, we take another eight hours sleep and pull out. From then on we run around the clock; ten hours on and ten off, until something blows up. If anything does, we're probably done."

"So maybe we've got one chance in fifty. Maybe in a hundred. A thousand. A million. It doesn't matter much. Let's get our sleep, and while we're at it, we might try praying a little."

This is a time for it if there ever was one."

She was silent a moment, then said, "You know, Marsh, you haven't told me a thing I didn't know?"

I nodded.

"I'm sorry. I'd almost hoped you might know some way out that I haven't been around long enough to pick up."

I didn't answer. I didn't have to. I'd said enough for a month already, and we both knew it.

My speech left an odd feeling in the pit of my stomach. Space crews are not selected for their talkativeness. In space, there is next to nothing to talk about, and a large part of pre-space training consists of developing the ability to be silent. Another part consists of eliminating as much as possible of the remaining necessity for talking.

So many words, meaning so little, amounted almost to blasphemy, but somehow the situation had seemed to call for them.

It was not a situation normally encountered by space crews.

THE SOUNDS behind me said that she was unfolding the beds, inflating the mattresses, and then slowly stripping off the three layers of her spacesuit "skin." I waited until I heard the peculiar "snap" she always made when she removed the inner layer, then turned and began

removing my own spacesuit.

Space crews are normally nude when the situation does not require spacesuits. It saves weight.

I watched her closely as she hung up the suit and crawled slowly between the covers, and tried to feel something remotely resembling passion. I remained as cold as the thin Martian air on the other side of the rubber-fabric envelope around us.

I gave up the attempt and tried to convince myself that desire would come later, when we got things organized better and the shock wore off. After all, that had also been included in our training.

I shrugged off the rest of my suit and hung it up carefully, strictly from force of habit, and slid into the bunk below hers.

I couldn't sleep. I could relax a little, but I couldn't sleep.

I'VE BEEN in space a long time.

Eleven years. And five years in training before that. I flew the third ship around the moon and the second to land on it. I flew one-sixth of the materials that built *Ley*, the first "stepping stone" satellite, and one-twentieth of those that went into *Goddard*, the second. I didn't bother keeping track of how much of Luna City got there in my ship. I flew the first and last

ship around Venus, and brought back the report that settled that mystery—dust. Those were the old days; the days of two-couple crews and the old faithful *Canfield* class three-steppers—the "cans."

The days, too, of the satellite-hopping *Von Brauns*—each of which consisted of a *Canfield* crew can stuck on the end of a six-hundred-foot winged javelin with two dozen times the cargo space of a *Canfield*. The "super-cans."

Just four of us then; myself and Mary and Ted and Belle Leonard. Four who might just as well have been one.

Then Mars.

Not that we were ready for it; just that it was a financial necessity to the rest of the project, with Venus eliminated from the picture. Taxes kept us in space. The scientific value of *Ley* and *Goddard* and *Luna City* wasn't enough for the tax-paying public. They didn't want ice cream; they wanted a chocolate sundae, with all the trimmings. Apparently our public relations people couldn't tell them that the fact that we could get that far in eight years, without an accident, did not necessarily mean that we were in a position to shoot for Mars.

So we shot for Mars.

Ships were no problem, of course. A *Canfield* could have

made it from Goddard to Mars and back, and wouldn't even have needed its third stage to do it.

We got the first seven of the new Lowell class ball-and-girder "space-only" ships—the "cannonballs"—and modified the daylights out of three old *Von Brains*, for landing purposes.

The crew was the joker. We had to have forty people trained specifically to make the observations and investigations that would justify the trip. Most of the operating crews either didn't have enough training or lacked it entirely. The crews that had started training when we first saw this jump coming weren't ready to be trusted farther than Ley.

So we set up four-couple crews; two old and two new, much against our better judgment. It worked out better than anybody had seriously expected, but somehow, even after three years in the same can, eight never became quite as nearly one as four had been.

HELENE DONNELLY wasn't sleeping much, either. Not a sound came from the bunk above me. Normally she was a rather restless sleeper.

She would be thinking the same things I was; in spite of her relative inexperience, she knew the score. She would be

half-consciously looking for me to "do something," even though she knew there was nothing I could do that she couldn't handle just as well.

Damn the guy that decided to implant that tendency in the younger crew members!

I wished there was something I could do to reassure her enough to nullify the effect, but there was nothing. *She knew the score.*

She knew that mechanically we would either make it or not make it.

She knew that it was psychologically impossible for two people conditioned to married life in space to continue to exist in sanity in any other relationship.

"Recombination" had been pounded into us since we first began training.

We were lucky in a way. There was only one possible recombination.

Yeah, lucky.

Helene Donnelly was a good kid, the best. But she was just that. A kid. If we didn't make it, she'd never live to be old enough to vote. She'd been in training since she was fourteen.

I'm almost thirty-five. I don't look it—space doesn't age you that way—but it's all there.

I could have recombined with Belle Leonard. It would have been awkward, but I could have

done it. Helene could have recombined with Ed Travis without too much trouble.

But this way—

If we didn't make an honest recombination soon—not just a going-through of motions—all the training and conditioning in the Solar System wouldn't be able to prevent us from feeling the terrible sense of loss that normally comes with the death of a loved one.

I was beginning to feel it already.

HELENE spoke once while we poked through the wreckage the next "day."

She said: "I've found the rest of the welding torch. It works." She didn't have to. I could see the cloud of steam from half a mile away.

When we returned to the tractor she took off her helmet and went through the motions without any hesitation, but obviously without feeling any more than I did—just the slightly damp contact of cold lips.

"I'm not tired," she said, "I'll start driving." She put on her helmet and climbed down through the airlock.

I hung up my helmet and started to peel off the rest of my suit, then stopped and went to the forward window. I tried to imagine a certain amount of grace in the movements as she

clambered up the side of the cab and got in through the hole I'd cut in the crumpled roof. But I've never known anybody who could move gracefully in a space suit.

Except Mary.

Helene was not graceful. Not even a little.

I watched her start the engine and warm it carefully, constantly checking the instruments. There isn't much that can go wrong with a closed-cycle mercury vapor atomic, even when the reaction is catalytically maintained to keep size and weight down. But if anything did go wrong, it would probably stay wrong. We didn't have any spare mercury.

After we'd been moving for about fifteen minutes, I went aft and checked the 'dozer. It was riding nicely at the end of a towbar that had been designed to pull the trailer it was supposed to have ridden on. If it would just stay there—

I watched for a while, then finished peeling off my suit and crawled into my bunk.

I still couldn't sleep.

IT TOOK ME an awfully long time to wake up. When I made it, I found out why.

I'd only been asleep an hour.

"I knew it was too good to last," I said. "What blew up?"

"Dozer brakes jammed," she

said. "Something wrong with the towbar."

That was fine. Perfect operation for twelve days; twenty-six hundred miles covered. Then it had to give trouble.

I rolled out of the bunk. "Well, I didn't think we'd even get this far. Any leaks?"

She shook her head.

Fine. That bar was a nightmare of pressure-actuated hydraulics. Very small, very light, and *very* precision. I wouldn't dare go into it very deeply.

Helene moved quietly to the other end of the compartment while I struggled into my suit. It had been that way ever since we started. We'd never tried to go through the motions after that one ineffectual attempt. So far, it hadn't mattered. Driving required all our attention, and after ten hours "up front" there wasn't much problem involved in sleeping, no matter what we had on our minds.

Now it would matter. That bar could take a long time to fix, even if I didn't go in very far. Helene would be just sitting around watching.

If she was my wife it wouldn't have mattered. . . .

She waited until I was through the lock before she followed.

There were normal trademarks for a hundred feet or so behind the 'dozer, then several hundred feet of shallow ruts.

She'd disconnected the 'dozer brakes and then moved forward and stopped slowly—using the brakes on the tractor itself—to see whether the trouble was in the bar or in the actuators on the 'dozer. I checked the actuators, brushed out some dirt and sand, and reconnected, then tried to drive away.

The brakes were still jammed.

"So?" she inquired.

"So we take the bar apart."

"The tech orders were in Ed's head."

"Don't I know it!"

"I didn't think you knew anything about this stuff. Anything specific, I mean."

"I don't."

"But you think you can fix it?"

"No, but I can't make it any worse."

She laughed abruptly. "True. How long?"

"Five minutes; five days. I don't know."

"No."

"Yes."

"Oh." She turned and went back inside.

I relaxed very slowly. Much too much talk again, and all about the much too obvious. We could just as well have wound up at each other's throats.

We still might.

I pulled off the outer layers of my gloves and turned up the heat in the skin-thin layer remaining.

THE BAR was still jammed when I got it back together, sixty-seven hours later.

"Well, disconnect the damn things and let's move out. We've wasted enough time already." Helene's voice rasped tinnily inside my helmet, barely audible over the gurgle of the air compressor on my back.

I already had the left brake actuator off when she spoke. For a fraction of a second I wanted to go up front and slap her fool head off, then I caught myself and disconnected the right actuator and climbed onto the 'dozer. From now on, one of us would have to ride it, braking with its own controls when necessary.

"Let's go," I said, and then, without thinking, I added: "And be sure you give me plenty of warning when you're going to put on the brakes or turn." I was getting as bad as she was.

She put the big tractor into gear and pulled out, unnecessarily roughly, it seemed to me.

Of course, it could have been the bar.

THE NEXT DAY we hit the rough country. Rough for Mars, that is. Just a lot of low, rolling hills, running at odd angles to each other, with an occasional small outcropping of rust-red, eroded rock to make things interesting. We'd known it was there; it was clearly visible

through the thousand-incher on Goddard. An ex-mountain range, they'd told us; not enough of it left to give us any trouble.

They couldn't see the rocks, and they didn't know we wouldn't be traveling according to the book.

It was obvious to both of us that riding the brakes on the 'dozer was the rougher job, and called for the quickest reflexes, which I had. Also, Helene had a hair-fine control over her voice, which I didn't have. Long before we hit the hills, I knew exactly how much braking she wanted from the way she asked for it. We couldn't have coordinated better if we'd been married for years.

In spite of that, it was amazing how little ground we could manage to cover in fifteen hours, and how little sleep we could get in the other nine and a half.

Helene stuck to the "valleys" as much as she could, which saved the equipment, but not the time. She couldn't avoid all the hills. Every so often, we'd run into a long, gradual rise, which terminated in a sharp drop-off. The tractor wasn't safe at an angle of over forty degrees. It took anywhere from half a day to a day and a half for the 'dozer to chew out a slot that the tractor could get down.

That was hard enough on us, but having to talk so much made it even worse. We were usually all but at each other's throats by the time the day's run was over. I usually spent three or four hours writhing in my bunk before I finally dozed off. I very seldom heard Helene twisting about in the bunk above me.

THE HILLS ended as abruptly as they began, after less than two hours driving on the thirty-fourth day. We still had almost eighteen hundred miles to go.

"Clear ahead," Helene called back. "How fast?"

We both knew we couldn't possibly make it in the forty days we'd hoped, and that if we did it wouldn't do us any good. We'd used up slightly over six days' worth of fuel for the 'dozer cutting slots for the tractor. There would be a balance between time and fuel that would give us the most possible days to use the 'dozer, when and if we got there.

"What's the active tank reading?" I asked.

"Point four."

Add that to the three inactive tanks, plus the two in the 'dozer, plus the auxiliaries, plus the one remaining salvaged "extra" strapped to the 'dozer's hood. Split it all up in terms of average consumption per mile at a given number of miles per hour.

Balance it against miles to the landing site, days left to L-day, and 'dozer average consumption per day. . . .

Ten minutes later I called her and asked: "Can you take an extra hour of driving a day?"

"If you can, so can I. You've got the rough seat."

I knew it was bravado; I did have the rougher ride, but she was a woman, and not a very big one, at that. On the other hand, I didn't dare assume anything but that she meant it. She was just itching for a chance to blow up in my face.

"Okay," I said, "sixteen hours a day, and average fourteen miles an hour. If your fuel consumption indicates more than point two over cruising, let me know."

We covered another two hundred and one miles that day.

On the thirty-fifth day, we covered two hundred and thirty-one miles.

On the thirty-sixth day, we covered two hundred and twenty-four miles.

On the thirty-seventh day, we had covered two hundred and seven miles in the first fourteen and one-half hours.

There wasn't any warning, either in external physical signs or on the tractor's instruments. One minute we were rolling along like a test run at the proving grounds, and the next

a four-hundred-foot stream of mercury vapor under pressure was coming out the left side of the tractor.

It lasted only a few seconds. That was all it had to.

I sat and stared for several long minutes, blinking my eyes and trying to see something besides a pure white line. I heard Helene climb slowly down from the cab and go up through the airlock, yet I really didn't hear anything at all.

Finally I got down and turned on my suit light and took a look at the hole.

There wasn't much to see. The hole was no bigger than a small lead pencil, and I probably wouldn't have been able to find it in the dark if it hadn't been surrounded by a slowly contracting area of white-hot metal.

We were lucky. We were incredibly lucky. If that mercury had come out at an angle either one degree higher or lower than it had, we'd have been minus a tread or a chunk of the tractor's body.

I didn't let myself think of how much good that was going to do us, without an engine, or what could keep us from each other's throats now.

I snapped off my light and went inside. There was certainly nothing we could do tonight.

Helene hadn't even taken off her helmet. She was sitting cross-

legged in the middle of the floor, hunched over, with her helmet buried in her hands as she might have buried her face in them if her helmet hadn't been in the way. When I got my own helmet off, I could hear her muffled sobbing.

I DIDN'T THINK; I just reacted. I reached her in one short stride and hauled her to her feet by her helmet. I twisted it a quarter turn to the right and jerked it off. I caught her by the collar as she staggered backwards and slapped her hard across each cheek; with my open palm on the left, backhanded on the right. I let go of her and she slumped back to the floor.

"Snap out of it kid," I said harshly. "It isn't that bad." I turned away from her and began to pull off the rest of my suit, starting with the heavy, armored outer layer of my gauntlets.

I had the inner layer half off before she finally spoke: "Marsh?"

"Yes?"

"I'll kill you for that."

"You frighten me."

"I'm not kidding."

"I know you're not, kid. You're just not thinking straight at the moment. You wouldn't be here if you were the type that could actually commit suicide, when it came right down to the fact."

"We're dead already."

"Then how do you expect to kill me?"

"It will be fun trying, Marsh."

It finally hit me that this was asinine, childish, and getting nowhere in a hurry. "Hell, kid," I said. "We've still got an engine in the 'dozer. It can be done. Maybe not neatly, but it can be done."

"Sure," she sneered, "sure it can be done. The 'dozer must have almost half the power of this hulk. We'll get there all right. We'll get there about the time the people upstairs pile up on the landing strip that isn't there. Then we can use the 'dozer to give them a good, Christian burial."

"Hell, Marsh, there's no sense trying to do it that way. That hole can't be very big. If we take the mercury out of the 'dozer and add what we can find lying around on the sand, and then pour it back in and weld the hole shut, we'll be all right. We'll get there a day or two later, but that won't be nearly as bad as if we try to tow with the 'dozer. Then we can swap mercury again and use the 'dozer. Couldn't be any simpler than that."

Like a fool, I tried to be logical: "How long do you think that weld would hold, kid? And then where would we be?"

"Right where we are now, only maybe a few miles closer. We haven't got anything to lose, and we've got *everything* to gain."

That was the start. In the course of an hour and a half, we covered every possibility and impossibility of the situation. Whatever one of us brought up, the other argued against. We talked like crazy.

We were.

When it finally penetrated that we'd both known everything we'd covered, before we started, I said bluntly: "Shut up."

"Go to hell."

"I suppose I will, eventually. Should I expect to see you there?"

"No."

"I'm sure it can be arranged," I said as I got up.

"You're not going to—?" she asked, suddenly really alarmed.

"No." By that time, she was on her feet, too. I spun her around and forced her to the floor. Then I tied her hands behind her back with some wire that had been lying on the floor behind me. I didn't try to tie her too tightly; just tight enough to be sure she couldn't get at the knots.

She didn't resist nearly as much as I had expected.

I repeated the process on her ankles, then gagged her to stop

the insane conversation, and put her in her bunk.

Then I turned out the lights and crawled into my own.

It never occurred to me that there were dozens of things she could cut herself loose with, just lying around the compartment.

I AWOKE and threw my arm up from sheer instinct. I grabbed something soft, and half-heard a metallic clatter behind my head. There was a weight on top of me, and then the weight and I were on the floor, locked together with the blanket between us.

Full consciousness was slow in coming, in spite of the shock of the activity. It seemed better, somehow, to just stay in that halfway state and enjoy it without knowing why. Finally, gradually, it penetrated that these were "the motions" that we were going through, but that we were not just "going through the motions."

This was for real.

A nasty question followed the thought: if this was for real, why did she keep wriggling and twisting all the time? The answer was close behind. She never had been able to hold still when her husband held her.

It seemed ages before we both realized how unsatisfactory it was to be separated by that blanket, and released each other

and lay apart, with the blanket half on me and half on her. After more ages, I got up and turned on the lights. There were certain formalities that really should be observed.

While I pulled on the outer skin of my spacesuit—I wouldn't be outside long enough to need any more—Helene quietly picked out the large wrench she'd dropped at the head of my bunk, and put it back in the case it had come from.

Love and hate are separated only by the thin edge of a coin . . . flip it and it can come up either way . . .

I picked up a sterile specimen tube and a thin, small sheet of metal, locked my helmet in place, and went out.

It took me a little longer than I'd expected to find a reasonably large blob of mercury, but I made up for it by getting it into the tube on the second attempt.

I was just beginning to feel the cold when I got back to the tractor.

Helene had the specimen preservation kit out and open. I sealed the mercury in transparent plastic, made a ring from a piece of wire, bonded the mercury to it, and coated the whole works with more of the transparent plastic.

It wasn't much, but—

Then we got out the Bible.

Later, we set up a double bunk.

We didn't set the alarm. *That* was our honeymoon.

NEITHER OF US said a word in the morning; actually it was past noon. We didn't have to. There was only one thing we could do that made the slightest sense.

I got out the welder and burned off the tractor's cab, then went underneath and cut through the mountings on the useless engine and everything else that wasn't an absolute essential.

Helene dumped everything movable and non-essential from inside.

Shortly before dusk I tossed the now-useless welder on top of the other junk and climbed onto the 'dozer and pulled out. There weren't any brakes on what was left of the tractor, but that would have to not matter. We were going to have to drive 'round the clock or not get there in time. A bulldozer is not a fast vehicle under any circumstances.

Logically, I couldn't see that we had much chance of cover-

ing eleven hundred miles in that rig, without having to make at least one stop quick enough to collapse the towbar and land the tractor on top of the 'dozer.

Emotionally, I couldn't believe a word of it. I knew we were going to get there.

We did.

Forty-eight days after the crash, I drove through the blackened edge of the northernmost "marker area," and parked just inside its southern tip.

When I came up through the airlock, Helene was looking out what had been the forward port of the tractor, which now faced the area we would have to make into a landing strip.

When I had the inner layer of my suit half off, she spoke for the first time since we'd been married: "We made it, Marsh."

I joined her and looked out into the dusk. It was going to be rough, but we could do it. "Not quite," I said, "we've still got that strip to chew out."

She was silent a moment, then said, tightening her arm around me: "I know. I said *we* made it, Marsh."

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Infinity's Choice



by DAMON KNIGHT

TUNNEL IN THE SKY, by Robert A. Heinlein. Scribners, 1955, \$2.75. TIME FOR THE STARS, by Robert A. Heinlein. Scribners, 1956, \$2.75.

As I have indicated elsewhere, I am not the man to write the definitive critical analysis of Heinlein, because I am a sucker for his work. However, I think I have finally hit upon something which has balled me up previously in reviewing Heinlein; I think it's the same thing that confused me about the Kuttners before I stopped trying to write about them as one person.

Heinlein's style, which I admire, is a flexible and efficient instrument, but so simple and conversational that it makes you think of Heinlein's work as a simple, standardized product, and of Heinlein himself as a simple, standardized man.

In reality, there are several Heinleins. One of them is a 19th century rationalist and skeptic, who believes in nothing he can't see, touch, and preferably measure with calipers. Another is a mystic, who strongly believes in

the existence of something beyond the world of the senses, and keeps an open mind even toward the ragtag and bobtail of mystical ideas, flying saucers and Bridey Murphy.

All this is fairly obvious and has been said before. What struck me as a new notion, on reading these two books, was that Heinlein's way of telling a story is a mixture, and not always the same mixture, of two things. One, which I have been taking for the only ingredient, is a perfectly open and natural narrative manner. Heinlein's first published story had it, and it has never changed much since. The other is the result of careful and labored craftsmanship.

A look at these two novels will show what I mean.

In each of them, the chief character is a junior edition of the standard Heinlein hero (who, as I wrote here last time, is a projection of Heinlein himself). In *Tunnel in the Sky*, he is Rod Walker, a high school senior who is sent, with others

of his class, through a dimensional doorway to undergo a "final exam in Advanced Survival." In *Time for the Stars*, he is Thomas Paine Leonardo da Vinci Bartlett, who goes along on one of the first interstellar exploration ships as one half of a telepathic communications team. The other half, who stays behind on Earth, is his twin brother, Patrick Henry Michelangelo Bartlett.

In each case, the rationale of these unlikely events is elegantly and plausibly worked out. Heinlein's bourgeois matter-of-factness has a way of cutting a fantastic idea down to size, and suddenly making it more lifelike and interesting as a result. The subject of what real telepathy would be like, for instance, is one I had regarded as closed; George O. Smith's unnecessary typographical tricks, in *Highways in Hiding*, only pointed up how little Kuttner and Bester had left to be said. Heinlein, without detracting from their work, nevertheless shows that under the circumstances of his story, a telepathic communication would necessarily be sensed as speech.

In *Tunnel in the Sky*, the basic gadget, the transdimensional doorway, is a more unconventional speculation than Heinlein usually allows himself; but once having made the as-

sumption, he treats it as soberly as if it were an everyday fact, including such usually ignored matters as allowing for the relative motions of the two planets connected by the doorway, and of getting them right side up with respect to each other.

At first glance, the associated idea of sending high school kids through these doorways, to live or die by their own resources on savage planets, seems even more wildly improbable. But in the overcrowded world Heinlein postulates, when Earth's population increase is in full explosion, such callous practicality begins to seem not at all unlikely.

In both novels, as usual, the story line is long and meandering. In *Tunnel in the Sky*, Walker and his classmates are isolated by a failure of the doorway, and are left to lead a Tarzan-like existence in the jungles. *Time for the Stars* follows the travels of the starship *Lewis and Clark*. The shipboard romance in this story never comes to much of anything, like the contest for leadership between Walker and another boy in *Tunnel in the Sky*.

Heinlein stops both novels by running them into the same tree: in the next to last chapter, emissaries from Earth turn up to end the adventures and take the participants home. In each case

there is then an epilogue; Walker, having learned some not very apparent lesson from his sojourn in the wilderness, grows up and goes out again as a professional captain, leading a train of Conestoga wagons to another virgin planet.

Heinlein's star-travelers, in *Time for the Stars*, like van Vogt's in "Far Centaurus," find that progress at home has made them obsolete before they finish their faster-than-light journey. The captain winds up a victim of technological unemployment; Tom, who is younger and more adaptable, sells out his partnership with his now-aged brother, marries his great-grandniece, who was unborn at the time he left—another version of the curious pedophile plot Heinlein used in *The Door Into Summer*—and prepares to go out to the stars as a colonist.

Now, in their looseness of structure these are both fairly typical Heinlein novels; what gives them coherence is not so much any development of character or action, as the general scheme of the author's thought against which they are laid. In the classical sense, *Tunnel in the Sky* has no form at all—it starts off in an arbitrary direction, goes on cheerfully until the author has written enough words to fill a book, and then stops. The hero's family relations are quite

perfunctorily sketched in; the sister, a member of the Amazons, is a delightful character, complete with plumed helmet and soldierly profanity, but she adds only local color, and the parents are cardboard figures.

Time for the Stars is a different case. From the very beginning, Heinlein has built up a carefully documented rivalry between the twins, first making it appear that Pat is somehow invariably the lucky one. For instance, it just happens to work out that Pat is tacitly accepted as the twin who is to go on the ship, leaving the unexciting part of the job, staying home on Earth, for Tom; and in fact, it is only when Pat has an accident while undergoing training for the job that Tom is chosen to go instead.

Then, slowly, Heinlein turns this picture around and shows you the other side. Tom, unaware of it himself, has been using his half-conscious antagonism toward his twin as a shield for timidity, almost cowardice.

This kind of slow unfolding of character and motive, plus the grotesque confrontation of the twins at the end of the book, gives the novel a structure which is firm and symmetrical enough to satisfy anybody. It is psychologically sound; dramatic; and complete: but it rubs me the wrong way. Careful though it is,

it seems an intrusive element; it does not belong in the story.

Heinlein's world is essentially one of naive vigor and optimism. His heroes are big and solid; his villains are unconvincing figures—Heinlein does not seem able to empathize at all with anyone who is life-opposed.

Although the division of Heinlein's novels into "adult" and "juvenile" is in many respects a joke, I think it is no accident that he has been so successful in the juvenile field. Almost invariably, his most convincing and attractive characters are adolescents in one sense or another. Lazarus Long, for instance, is several centuries old at the time of "Methuselah's Children," but he has never quite grown up.

It seems to me that Heinlein's natural attitude toward the kind of Freudian probing he uses here ought to be the instinctive repugnance he shows toward modern art. I am guessing, and may be guessing wrong, but it seems to me that this is a thing Heinlein has begun mortaring into his stories, conscientiously but without conviction, because he thinks it will improve them.

At any rate, when it comes to Heinlein I am a conservative myself. Certainly we have enough writers already who will give you the textbook psychoanalytic interpretation of a character, from childhood up. I liked the

old romantic Heinlein a whole hell of a lot better, and I have a hunch that in the end, he may even be nearer the truth.

∞

THE NAKED SUN, by Isaac Asimov. Doubleday, \$2.95.

Isaac Asimov's second novel about Lije Baley and R. (for Robot) Daneel Olivaw is again a detective story set in a science fiction background. It is also something much more unusual in science fiction, and perhaps not wholly relevant to it: a love story.

As in *The Caves of Steel*, Baley and Olivaw—the agoraphobic New York detective and the manlike Spacer robot—are teamed in the investigation of a murder. This time the murder has occurred on one of the Spacer worlds, normally closed to Earthmen. Baley is called in because murder is unheard-of among Spacers.

The planet, Solaria, is one devoted to an idyllic baronial culture, in which thousands of robots serve every human. Living alone on their great estates, and using a highly advanced form of tri-dimensional television, the Solarians have no need to meet in the flesh, except on extraordinary occasions, and have developed a phobia against it. Thus the bludgeon murder of Dr.

Rikaine Delmarre, director of the planet's foetus farm, is thought inexplicable by the Solorians. Even the murdered man's wife, Gladia, who was found unconscious at the scene of the crime, could not have committed it, because no murder weapon is to be found. A robot which was present has apparently been deranged by witnessing the murder. The robot itself could not have aided in the crime, because the First Law of Robotics would have prevented it.

Baley's efforts to unravel this mystery are complicated by Oliav's overprotectiveness, by a second murder and an attempt on Baley's own life, and by the disturbing, half-childish femininity of suspect number one, Gladia Delmarre.

As science fiction, I think most readers will find the book a little thin, although ingenious and funny in places. As a detective story, it is downright disappointing: the solution to the missing weapon problem, after all the foofarow, turns out to be over-elaborate to the point of silliness. But the shy, unstated romance between Lije and Gladia is a really delightful thing, and absolutely unexpected in a work of this kind. Ike, if you can do this, why are you bothering to write science fiction at all?

THE DEEP RANGE, by Arthur C. Clarke. Harcourt, Brace, \$3.95.

Those who read Arthur C. Clarke's short story, "The Deep Range," in *Star Science Fiction No. 3*, edited by Frederik Pohl, will remember it as a provocative glimpse into a future where whales are cattle, and the herds-men ride in tiny one-man submarines.

As he did with *Childhood's End*, Clarke has now built onto the end of this short story in order to make it into a novel. Don Burley, the hero of the original story and its only human character, evidently turned out to be too ruggedly simple a type for the plot Clarke had in mind; so, early in the book, a new character, Walter Franklin, is introduced, and gradually nudges Burley into the background.

This is not really the best way of organizing a novel, and for a while the viewpoint bounces back and forth like a ping-pong ball.

In chapter 18, somewhat to the reader's relief, Burley is buried by an underwater avalanche, and thereafter Franklin has our full attention.

The background, in this larger treatment, becomes much more impressive and believable than it was in the original story.

Clarke has built up his Bureau of Whales, and its fascinating undersea activities, with painstaking care, from the routine training of recruits, riding "torpedoes," like underwater surfboards, to the production-line killing and slaughtering of the whales.

The novel, in fact, is nearly all background. Most of the time the actors in the foreground are almost painfully inadequate, and the motions Clarke puts them through are puppet-like. The whole thing has the embarrassing solidity of a bad Hollywood adventure film—until, toward the end, it suddenly turns into a good one. The underwater rescue operation, when a submarine is trapped on the ocean floor by a collapsed oil derrick, is superb drama; and Franklin himself acquires stature in the most undramatic conflict between the Bureau and the Mahanayake

Thero, a Ceylonese Buddhist leader who is determined to end the Bureau's slaughter of whales for food.

The moral problem thus posed comes as it were out of nowhere to us beef-eating readers, who have learned to shut our eyes to the same problem in our own time. Clarke makes a startlingly effective argument for the Mahanayake's position. And, with characteristic detachment, instead of narrowing the focus as the story ends, Clarke widens it; and we see that his concern all along has been, as it always is, with history rather than with the transient concerns of individual men. Clarke's abiding sense of the grandeur of creation may perhaps make him a poor recorder of merely human character and emotion; but we need that wide view—that breath from the macrocosm, cutting through the reeks of our little sty. $\infty \infty$

THE SLAVE!

Ex-Special Agent Charles Barker had once been a man, and might become a man again—but only by being two men at the same time! Meanwhile, his job is to uncover the most incredible alien invasion of all time—literally incredible, because it's been going on all around us for centuries, but no one would suspect it or believe it if they did. It looks like a hopeless problem, especially when Barker becomes a galley-slave on a mighty galleon of space—but the story builds to a blazing climax that will thrill and startle you. It's a short novel by that undisputed master, C. M. Kornbluth; the title is *The Slave*, and it appears in the September issue of SCIENCE FICTION ADVENTURES —on sale June 10.

by ROBERT F. YOUNG

The Courts of Jamshyd

Once, Ryan knew,
dogs had run with man,
not from him....

They say the Lion and the
Lizard keep
The Courts where Jamsyād
gloried and drank deep—
—The Rubáiyát

THE dust-reddened sun was low in the west when the tribe filed down from the fissured foothills to the sea. The women spread out along the beach to gather driftwood, while



the men took over the task of setting up the rain-catch.

Ryan could tell from the haggard faces around him that there would be a dance that night. He knew his own face must be haggard too, haggard and grimed with dust, the cheeks caved in, the eyes dark with hunger-shadows. The dogless days had been many this time.

The rain-catch was a crazy quiltwork pattern of dogskins laboriously sewn together into a makeshift tarpaulin. Ryan and the other young men held it aloft while the older men set up the poles and tied the dog-gut strings, letting the tarp sag in the middle so that when it rained the precious water would accumulate in the depression. When the job was done, the men went down to the beach and stood around the big fire the women had built.

Ryan's legs ached from the long trek through the hill country and his shoulders were sore from packing the dogsing tarp over the last five miles. Sometimes he wished he was the oldest man in the tribe instead of the youngest: then he would be free from the heavy work, free to shamble along in the rear on marches; free to sit on his haunches during stopovers while the younger men took care of the hunting and the love-making.

He stood with his back to the fire, letting the heat penetrate his dogsing clothing and warm his flesh. Nearby, the women were preparing the evening meal, mashing the day's harvest of tubers into a thick pulp, adding water sparingly from their dogsing waterbags. Ryan glimpsed Merium out of the corner of his eye, but the sight of her thin young face and shapely body did not stir his blood at all, and he turned his eyes miserably away.

He remembered how he had felt about her at the time of the last dog kill—how he had lain beside her before the roaring fire, the aroma of roasted dog flesh still lingering in the night air. His belly had been full and he had lain beside her half the night, and he had almost wanted her. She had seemed beautiful then, and for many days afterward; but gradually her beauty had faded away and she had become just another drab face, another listless figure stumbling along with the rest of the tribe, from oasis to oasis, from ruin to ruin, in the eternal search for food.

Ryan shook his head. He could not understand it. But there were so many things that he could not understand. The Dance, for instance. Why should the mouthing of mere words to the accompaniment of rhythmic

movements give him pleasure? How could hatred make him strong?

He shook his head again. In a way, the Dance was the biggest mystery of all. . . .

MERIUM brought him his supper, looking up at him shyly with her large brown eyes. Illogically, Ryan was reminded of the last dog he had killed and he jerked the earthen pot out of her hands and walked down to the water's edge to eat alone.

The sun had set. Streaks of gold and crimson quivered in the wind-creased water, slowly faded away. Darkness crept down from the gullied foothills to the beach, and with it came the first cold breath of night.

Ryan shivered. He tried to concentrate on his food, but the memory of the dog would not go away.

It had been a small dog, but a very vicious one. It had bared its teeth when at last he had cornered it in the little rocky cul-de-sac in the mountains, and as further evidence of its viciousness, it had wagged its ridiculous tail. Ryan could still remember the high-pitched sound of its growl—or was it a whine?—when he advanced on it with his club; but most of all he remembered the way its eyes had been when he brought the club down on its head.

He tried to free himself from the memory, tried to enjoy his tasteless meal. But he went right on remembering. He remembered all the other dogs he had killed and he wondered why killing them should bother him so. Once, he knew, dogs had run with the hunters, not from them; but that was long before his time—when there had been something else besides dogs to hunt.

Now it was different. Now it was dogs—or death. . . .

He finished his meatless stew, swallowing the last mouthful grimly. He heard a soft step behind him, but he did not turn around. Presently Merium sat down beside him.

The sea glinted palely in the light of the first stars.

"It's beautiful tonight," Merium said.

Ryan was silent.

"Will there be a dance?" she asked.

"Maybe."

"I hope there is."

"Why?"

"I—I don't know. Because everyone's so different afterwards, I suppose—so happy, almost."

Ryan looked at her. Starlight lay gently on her child-like face, hiding the thinness of her cheeks, softening the hunger-shadows beneath her eyes. Again he remembered the night he had

almost wanted her and he wanted it to be the same again, only all the way this time. He wanted to want to take her in his arms and kiss her lips and hold her tightly to him, and when desire refused to rise in him, shame took its place, and because he couldn't understand the shame, he supplanted it with anger.

"Men have no happiness!" he said savagely.

"They did once—a long time ago."

"You listen too much to the old women's tales."

"I like to listen to them. I like to hear of the time when the ruins were living cities and the earth was green—when there was an abundance of food and water for everyone. . . . Surely you believe there was such a time. The words of the Dance—"

"I don't know," Ryan said. "Sometimes I think the words of the Dance are lies."

Merium shook her head. "No. The words of the Dance are wisdom. Without them we could not live."

"You talk like an old woman yourself!" Ryan said. Abruptly he stood up. "You *are* an old woman. An ugly old woman!" He strode across the sand to the fire, leaving her alone by the water.

The tribe had broken up into groups. The old men huddled

together in one group, the younger men in another. The women sat by themselves near the wavering perimeter of the firelight, crooning an ancient melody, exchanging an occasional word in low tones.

Ryan stood by the fire alone. He was the youngest male of the tribe. He and Merium had been the last children to be born. The tribe had numbered in the hundreds then, and the hunting had been good, the dogs still tame and easy to find. There had been other tribes too, wandering over the dust-veiled land. Ryan wondered what had become of them. But he only pretended to wonder. In his heart, he knew.

It was growing colder. He added more driftwood to the fire and watched the flames gorge themselves. Flames were like men, he thought. They ate everything there was in sight, and when there was nothing more to eat, they died.

SUDDENLY a drum throbbed out and a woman's voice chanted: "What is a tree?"

A voice answered from the group of old men: "A tree is a green dream."

"What has become of the living land?"

"The living land is dust!"

The drum beat grew louder. Ryan's throat tightened. He felt the refreshing warmth of anger

touch his face. The opening phase of the Dance always affected him, even when he was expecting it.

One of the old men was moving out into the firelight, shuffling his feet to the beat of the drum. The light reddened the wrinkles on his thirty-year-old face, made a crimson washboard of his forehead. His thin voice drifted on the cold night air:

*"The living land is dust, and those
who turned it into dust
are dust themselves—"*

A woman's voice took up the chant:

*"Our ancestors are dust:
dust are our gorged ances-
tors—"*

There were other figures shuffling in the firelight now, and the beat on the dogskin drum head was sharper, stronger. Ryan felt the quickening of his blood, the surge of new-born energy.

Voces blended:

*"Dust are our gorged ances-
tors,
our ancestors who raped the
fields and ravished the hills,
who cut the forest chains and
set the rivers free;*

*our ancestors who drank deep
from the well of the world
and left the well dry—"*

Ryan could contain himself no longer. He felt his own feet moving with the vindictive beat of the drum. He heard his own voice take up the chant:

*"Let us take the memory of
our ancestors
and tear it open, rend its
vitals,
throw its entrails on the fire:
our ancestors, the eaters,
the putrefiers of the lakes and
the rivers;
the consumers, the destroyers,
the murderers of the living
land;
the selfish, the obese, the great
collectors,
who tried to devour the
world—"*

He joined the stomping mass of the tribe, his hands going through the mimic motions of killing, rending, throwing. Strength flowed into his emaciated limbs, pulsed through his undernourished body. He glimpsed Merium across the fire and he caught his breath at the beauty of her animated face. Again he almost wanted her, and for a while he was able to convince himself that some day he would want her; that this time the effect of the Dance

would not wear off the way it always had before and he would go on feeling strong and confident and unafraid and find many dogs to feed the tribe; then, perhaps, the men would want the women the way they used to, and he would want Merium, and the tribe would increase and become great and strong—

He raised his voice higher and stomped his feet as hard as

he could. The hatred was like wine now, gushing hotly through his body, throbbing wildly in his brain. The chant crescendoed into a huge hysterical wail, a bitter accusation reverberating over the barren hills and the dead sea, riding the dust-laden wind—

*"Our ancestors were pigs!
Our ancestors were pigs! . . ."*

oo oo oo

TALES FOR TOMORROW

Our short novel for next issue is "To Make a Hero" by Randall Garrett. It introduces Leland Hale, a hero who is definitely made, not born—and made through no particular choice of his own. Hale, judged solely on his own merits, is conniving, greedy, heartless, amoral—in fact, it's almost impossible to find anything good in his character, unless you count shrewdness. But he is a hero to the Plague-ridden planet of Cardigan's Green and to every doctor, interne and pilot in the Interstellar Health Commission—for reasons that will surprise and fascinate you, and perhaps raise your hair a bit.

The short story department for October is a particularly distinguished one, too. Naturally, it will include the three final stories in Arthur C. Clarke's "The Other Side of the Sky" series. If anything, they're even better than the first three. And you'll find, after reading them all, that they are more than just six separate short stories on the same theme; the six are beautifully integrated into one over-all unit, building to a climax that has already left a couple of members of our staff with tears in their eyes.

In addition, you'll find "The Last Man Left in the Bar," by C. M. Kornbluth, "Death Scene" by Clifford D. Simak, and other fine stories, as well as our usual features. Remember, the next INFINITY goes on sale August 1!

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NEW TITLES (to be sent out upon date of publication this spring)

— The Seedling Stars by Blish Jan.	\$3.00	— Colonial Survey by Leinster Feb.	\$3.00
— Two Sought Adventure by Leiber March	\$3.00	— Earthman's Burden by Anderson & Dickson April	\$3.00
— S F: 57 The Year's Greatest, ed. Merril May	\$3.95	— The Return of Conan by de Camp & Nyberg June	\$3.00

CURRENT TITLES (for immediate delivery)

— Lost Continents by de Camp	\$5.00	— S F: The Year's Greatest ed. Merril	\$3.95
— Reprieve From Paradise by Elliott	\$3.00	— Interplanetary Hunter by Barnes	\$3.00
— Address: Centauri by Wallace	\$3.00	— Coming Attractions ed. Greenberg	\$3.50
— Against the Fall of Night by Clarke	\$2.75	— All About the Future ed. Greenberg	\$3.50
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— Children of the Atom by Shiras	\$2.75	— Coming of Conan by Howard	\$3.00
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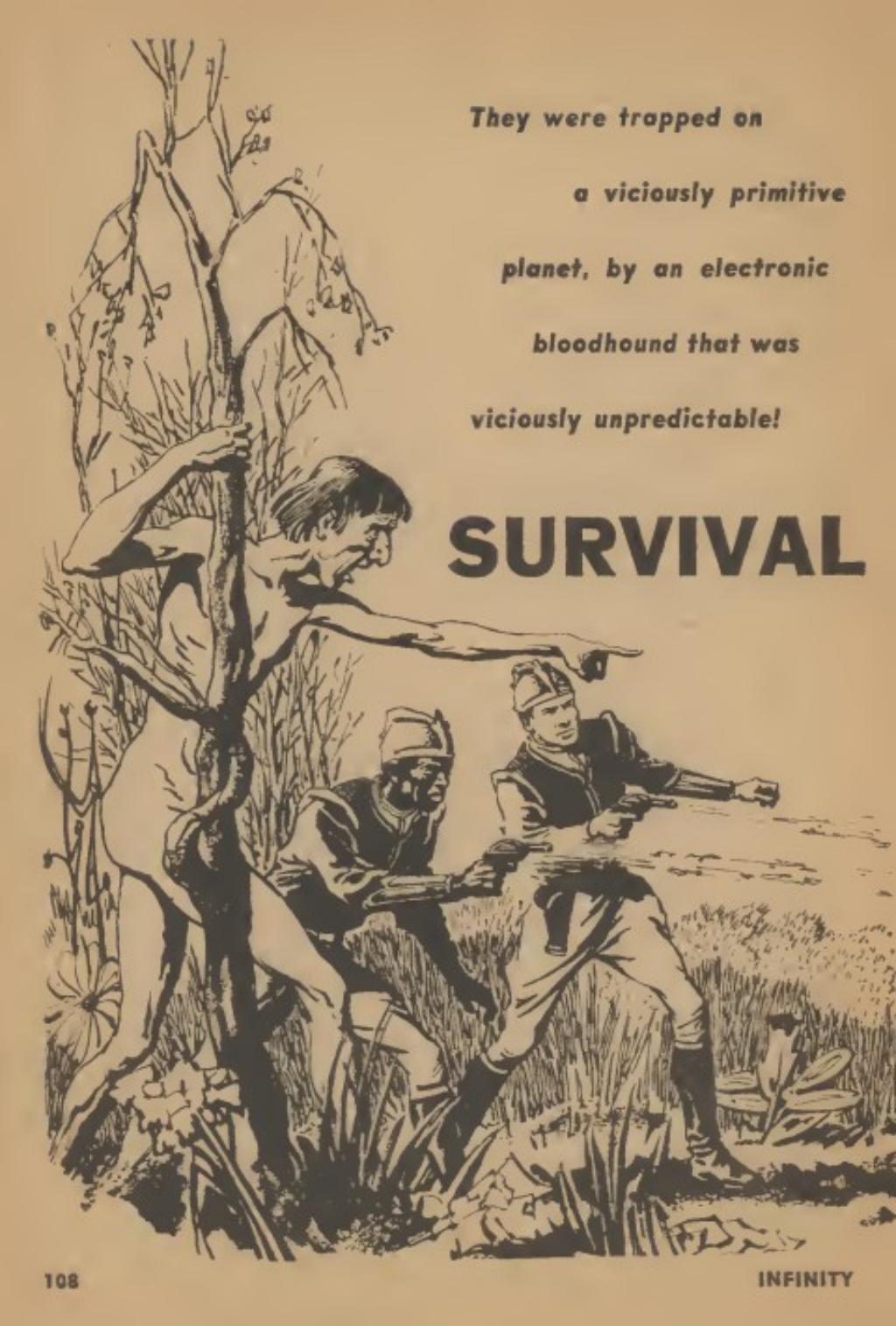
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A black and white illustration depicting a scene of survival. On the left, a man is shown climbing a tall, leafless tree. He is wearing a light-colored shirt and trousers. In the center-right, two other men are crouching in a field of tall grass and weeds. They are both wearing hats and dark uniforms, and they are holding rifles. One rifle is pointed towards the right side of the frame. The background shows a simple horizon line.

They were trapped on

a viciously primitive

planet, by an electronic

bloodhound that was

viciously unpredictable!

SURVIVAL

THE SURVEY TEAM was seven parsecs beyond the Rim when the bloodhound picked up their trail.

Three years earlier the inevitable had happened. The humans of the Ten Thousand Worlds had met another race with the faster-than-light space drive—and an expanding population. The contacts had been brief—and violent. Each race

had set up defenses against the other, and maneuvered for position and control of the habitable worlds separating them. The aliens' bloodhounds formed the outer circle of their defense perimeter.

The s-tracer continued its bleak chirping as Wallace read the figures on its dial and made a swift calculation. "We have time for one dip into space-

FACTOR

by CHARLES V. DE VET

Illustrated by ORBAN



bridge," he informed Saxton, the other member of the team. "If we don't find a planet fast when we come out, we've had it."

Saxton nodded. "We'd better backtrack. Set the bridge for that star group we recorded yesterday. Hurry. We haven't any time to spare."

Four minutes later Wallace brought the two handles of the bridge control together—and the ship winked into hyperspace. Wallace's body jerked upright, and he sat stiff and straight, fighting the impulse to retch that rode his stomach muscles. The room around him took on the visual consistency of thin milk. The low hum of the ship's instruments increased in intensity through the hands that he pressed tightly to his head. Mingled with the sound of the small motors was Saxton's high strained muttering: "I can't take any more of it! I can't take any more of it!"

Then all was normal again. They were out of hyperspace.

Wallace reached for a knob on the board in front of him and began turning it slowly. Both men watched the vision panel on the front wall. After a minute a blue globe floated in from one side. "We'll have to try that one," Wallace said. "It at least has atmosphere."

"We don't have any choice,"

Saxton answered. With his head he indicated the s-tracer. Its stark chirping had begun again.

"The hound's closer than I thought," Wallace complained. "We'll have to risk a faster passage to the surface than would ordinarily be safe." Drops of perspiration that had gathered on his forehead joined together and ran down the side of his nose. He shook his head to clear them away.

By the time they entered the blue planet's atmosphere the intervals between the chirps of the s-tracer had shortened until now they were almost continuous. Gradually, as they plunged toward the planet's surface, the room's temperature rose. They stripped to their shorts and kept the pace steady. When it seemed that they could stand the heat no longer the ship paused, and settled slowly to the ground.

Quickly Wallace shut off the drive motors. The only sound within the ship was the purring of the cooling apparatus.

"Any chance that it can detect our cooling motor?" Saxton asked.

"I don't believe it can follow anything smaller than our main drive," Wallace answered. He pointed to the s-tracer. "It's already lost us. Of course we know it won't go away. It'll circle the planet until we come out and try again."

During the next hour, as the temperature within the ship returned slowly to normal, Wallace and Saxton kept busy checking the gauges that measured and recorded the elements in the planet's atmosphere.

At last Saxton sighed heavily. "Livable," he said.

"Closer to Earth norm than we could have hoped," Wallace agreed.

"What do we do now?"

"We could stay here for two years — until the bloodhound runs out of fuel. That's the estimated time it's supplied for."

"That doesn't sound like a very encouraging prospect." Saxton's dark tan features were lined with worry. "We don't have food enough, for one thing. Maybe the aliens will get discouraged and go away."

"Hardly. You've forgotten that the bloodhounds are fully automatic, and unmanned. A machine doesn't discourage very easily."

"We sure as heck ought to be able to outwit a machine," Saxton said. He thought for a moment. "If we waited until it was across the planet from us, we might have time to get out, and take another jump toward home. One more and we'd be far enough in so our own cruisers could take care of the bloodhound."

Wallace shook his head. "Its

speed is too great. Our best chance is that it doesn't hold to a straight path around the planet. The aliens—not knowing the size of any body we might land on—wouldn't set it for a deadline trajectory. I hope."

There was nothing for them to do until the s-tracer had followed the movements of their stalker long enough to make an adequate graph. They decided to go outside while they waited.

WALLACE and Saxton took only a few steps—and stopped in amazement. They had a visitor!

The native rose from his kneeling position on the ground and stood erect. Wallace studied the face of the naked, stick-thin savage, trying to penetrate beneath the dirt and grime, beneath the mask of impassive features, to find the quality that held him in questioning immobility. For a moment he succeeded.

It was not high intelligence that he found, but rather an innate conviction of power. A conviction and self-assurance so deep that it needed no demonstration for expression.

Wallace glanced at Saxton where he leaned against the spaceship's ramp, the whites of his eyes contrasting sharply with the black of his clean negroid skin. It was clear that he too

sensed the odd quality in the other. And that he was equally unable to decide whether the savage that so incuriously regarded first one then the other of them was to be feared, or accepted as amicable. But both already realized that this was no ordinary meeting between humans and an outworld native. They were on the verge of an unusual experience.

The savage had been kneeling with his forehead touching the ground when they stepped out of the ship. However, now that he stood before them, there was nothing abject in his demeanor. For a long minute he did not speak or make any motion other than to regard them. Casually then he raised his right hand and touched his chest. "Al-fin," he said.

The meaning of the gesture was apparent: Wallace readily understood that the savage was giving his name. He touched his own chest. "Ivan," he murmured.

The native turned his gaze to Saxton.

"Gus," Saxton said, shifting his feet uncomfortably.

The native nodded. "Come!" he commanded. He turned his back and walked away.

There was no question in Wallace's mind about obeying. It was only his subconscious that moved his hand, to make certain

that his gun was in its holster, and to glance at Saxton to see that he too was armed. He had walked several yards before the incongruity struck him: the savage had spoken Earthian!

THEY FOLLOWED the native for several miles over a faint game trail that wound leisurely through brush and skimpy, small-leaved trees, before either of the men recovered his composure enough to speak.

"He said 'Come,'" Saxton mused. "Yet we're the first humans this far over the Rim. Where did he learn our language?"

Wallace shrugged. "I've been wondering too," he answered.

"Should we try to talk to him?" Saxton asked, glancing ahead at their companion.

The native, apparently, had no interest in their conversation. "Better wait," Wallace suggested.

"I don't understand it." Saxton's tone was querulous. "No one's allowed over the Rim ahead of us. A section has to be surveyed, and worlds declared fit for habitation, before colonists can move in. Yet we land here and find a native speaking our language."

"Perhaps he isn't a native," Wallace said.

"What do you mean?"

"When Earth first discovered

spacebridge there were no laws regulating its use. Limits were put on colonizing areas only after some of the earlier expeditions failed to report back. One of them might have been marooned here."

"Then this fellow's human?"

"He could be."

"If he is, would he be naked?" Saxton asked.

"Some of those lost expeditions disappeared as long as two thousand years ago," Wallace answered. "A colony could have slipped back a long ways in that time."

"But not this far," Saxton demurred. "They'd still have some traces of their original culture left."

"A one-ship colony would have very limited mechanical resources," Wallace said. "And they'd be isolated here. As soon as the tools and machines they brought with them wore out they'd be almost impossible to replace. The odds are they'd slip back fast."

"I don't know." Clearly Saxton wasn't satisfied—but he let the subject hang. "When we saw him kneeling on the ground, I thought that he was worshipping us. But since then he's been acting as if he thought he was the god instead of us."

They were halfway across a small clearing now and before Wallace could answer the native

ahead stopped abruptly. He stood motionless, with his head tilted to one side, as though listening. After a moment he motioned them to move to the left.

As Wallace and Saxton obeyed, Al-fin pointed urgently toward their guns. They drew, and the native turned to stare at the bushes at the far side of the clearing.

"What does he want?" Saxton asked.

"I don't—" Wallace's answer was cut off as a huge "cat," with long stilt-like legs spread wide, sprang out of the bushes—directly at them.

Wallace and Saxton sprayed the beams of their guns across the cat's chest, burning a wide, smoking gash. The beast landed, sprang again, and died.

Saxton let out a long breath of relief. "Close," he said.

Wallace stood with a puzzled frown on his face. "How did he know the animal was there?" he asked.

"He must have a good sense of hearing," Saxton answered doubtfully.

"It can't be that good," Wallace protested.

"Maybe this is our chance to get some fresh meat," Saxton said. He drew a knife from his belt and knelt beside the cat's carcass. He made several rapid cuts. After a minute he looked up. "Nothing edible," he said.

"Nothing but skin, gristle, and tendons."

They walked on.

THEY ENTERED another clearing, and found themselves in the midst of a group of naked savages, obviously Al-fin's people.

"Where did they come from?" Saxton asked, resting his hand on the grip of his gun.

Wallace looked his way and shook his head. "No guns," he said. "We'll have to take the chance that they're friendly."

Most of the members of the group, Wallace observed, were lying on the ground, or idling about at the edges of the small clearing. He counted twenty-three—of both sexes, and varying ages. There was no sign of clothing or ornament on any of them. They were naked, filthy, and nondescript; yet each had the mark of that quality that had puzzled them in Al-fin—the deep inner assurance. A few glanced their way, but without any evidence of an unusual degree of interest.

Their attention returned to Al-fin. Streaks of sweat had made gray trails on his grimy face, and he gave off an odor that was sharp and rancid. He sat on the ground and motioned for Wallace and Saxton to do the same.

Wallace hesitated, then spread his hands resignedly. "This is

a strange game," he said. "We'll let him make the first moves." He and Saxton sat down together.

Al-fin began speaking, without inflection and with few pauses. Some of the individual words sounded faintly familiar, but the two men could make no sense of what he said.

"I'm afraid we can't understand you," Wallace told him. In an aside to Saxton he said, "He won't understand me either, but I don't think we'd better ignore him."

Saxton nodded. "I guess you are right about his being human," he said. "Some of those words were definitely Earthian."

Al-fin raised his voice in a shout, "Il-ma!"

One of the women in the center of the clearing laughed and came toward them. She was stick-thin, as were Al-fin and most of the others, and very dirty. As she came near she smiled. Her teeth were discolored and rotting. She giggled.

Al-fin indicated her with a sweep of his arm. "Mate?" he inquired.

Wallace felt himself reddening. "Is he offering her to us?" he asked Saxton.

"I think so." Saxton smiled uneasily. "It looks like it's our move now."

"We'll have to risk offending them." Wallace looked at Al-fin

and shook his head vigorously.
"No mate," he said.

The woman giggled again and walked away. Al-fin seemed to have lost interest. He pulled himself jerkily to his feet and went across the clearing to the fire that the two surveyors had noted earlier. A large clay kettle rested on a flat rock over the fire.

"There's meat in that kettle," Saxton said, whimsically licking his lips. "I hope he passes some around."

"I don't think we should eat any," Wallace cautioned.

"Why not?"

"You know the saying, one man's meat . . ."

"But I'm starved for fresh meat," Saxton argued.

"We'll see if we can get him to give us some," Wallace said. "We can take it back to the ship and test it before we eat any."

They watched Al-fin as he dug in the kettle with a stick and placed the food he speared on a large leaf. He carried it to where an old man sat with his back resting against a tree trunk. The hoary veteran had a long scar on his right arm that ran from shoulder to elbow; evidently he had had a brush with one of the big cats sometime in the past. Oddly enough, he was the only native that was not thin and hungry-looking.

"He must be the chief," Sax-

ton said. "At least he's well fed."

Wallace nodded.

When Al-fin returned Saxton said, "Meat." At the same time he rubbed his stomach in a circular motion.

Al-fin paused, thinking over what Saxton had said, then nodded several times. He made a gesture with his arm for them to follow and led them to the fat old man. "Meat," Al-fin intoned expressionlessly, and stood as though waiting for the old man's reply.

"I hope he's in a generous mood," Saxton said.

They had seen no sign from the old man, but Al-fin turned to them and nodded once more. "Meat," he said. He made no further move.

"Why doesn't he get it?" Saxton asked finally. "Apparently he agrees—but he just stands there."

"Maybe we're supposed to do something now," Wallace said. "But what? Do you suppose we're expected to pay him some way?"

"That could be," Saxton answered. "Or maybe the chief's eating the last of what they have now, and they'll give us a chunk when they get some more. Anyway, let's not wait any longer. I'm starved. Even canned concentrate would taste good to me now."

BY MORNING the s-tracer had marked the tracking chart sufficiently to give them some data on the bloodhound's actions. Wallace went over it carefully.

Saxton stayed in his bunk and pretended to be still sleepy, but Wallace could feel his gaze following the work closely. When at last he looked up Saxton said, "Well?"

"We have something to work on," Wallace answered the question in his voice. "But unless we get more, I don't see how it will help us."

"The bloodhound," he went on, not waiting for further inquiry from Saxton, "is acting pretty much as we thought it would. It has no straight line trajectory. At irregular intervals it circles, backtracks, or goes off at a new tangent. Often it stays over a particular territory for longer than the three hours we'd need to get away. It's probable that at some time it will do this on the other side of the planet—where it couldn't pick up the signal of our leaving. But . . ."

Saxton was sitting up now. "But what?"

"It's following a random pattern." Wallace studied his fingernails as he sought for words to make the explanation clear. "The s-tracer will show us when it is out of range—but there's no way for us to know how long

it will stay in any one place."

"In other words there will be intervals when it will be directly across the planet from us. But unless it stayed there for close to three hours—the time we'd need to clear the atmosphere—it would pick up our signal as it came around, and run us down?"

"That's about it."

"Then we'll have to take the chance."

"We could. And if we can think of nothing better, we will. But the odds would be heavily against us. Most of its locale changes are made in a shorter period of time than we'd need to get away."

"We can't sit here for two years." Saxton was a man whose high-strung nature demanded action, and was the more inclined of the two to take chances. Wallace preferred weighing influencing factors before making any decision.

"I think we'd better wait," Wallace said. "Perhaps we'll be able to think of something that will give us a better chance."

Saxton pulled the sheet-blanket off his legs irritably, and climbed from the bunk, but he did not argue.

DURING THE MORNING Saxton killed a small rodent, but found its flesh as inedible as that of the cat. Wallace stayed

inside studying the charts and instruments.

They had their noonday meal in a small clearing by the side of the ship. Wallace had been able to find no way of solving their difficulty. For want of a better plan they'd decided to wait—while keeping close track of their stalker.

"I've been thinking about those natives," Wallace said, as they lay stretched on the grass. "If they are lost colonists—have you wondered how they managed to survive here so long?"

"I did wonder how they protected themselves against the cats," Saxton answered. "They don't seem to have any weapons."

"Al-fin demonstrated that they must have exceptionally good hearing," Wallace said. "But would that be enough? You'd think the cats would get them—when they're sleeping, if not during the day—or kill off their young."

"That's what I meant," Saxton said. "We saw no weapons, so they must have some other means of defense."

"They live pretty much like animals," Wallace observed. "Maybe they stay alive the same way. If animals aren't powerful, they're usually swift. Or they have some other survival characteristic, such as prolific propagation. But what do these savages

have—except perhaps the sharp hearing that you mentioned? That alone shouldn't be a deciding factor. Yet they were able to survive here for two thousand years."

"How about an instinct of dispersal?" Saxton asked. "There might be hundreds of groups like the one we saw."

"That would help. But my thought was that if they don't use weapons they might have gone at it from another angle: they adjusted themselves, instead of their tools, to their environment."

"Special ability stuff?" Saxton asked.

Wallace glanced over at the other man. By the look of abstraction on Saxton's face he knew that no answer was necessary. Saxton's imagination was a moving force. When a subject intrigued him he could no more abandon it and turn to something else than he could stop breathing. The trait was one that made him an ideal partner for Wallace, with his more logical reasoning, and his insistence on weighing fact against fact and belief against belief. It was, in fact, the reason the two men had been teamed. One was the intuitive, the other the harmonizing, controlling, factor in their combination.

Saxton rose and stretched. "I think I'll go inside," he said.

"I want to poke around in the library a while."

Wallace smiled and followed his companion into the ship. This at least would take Saxton's mind off their troubles. Their enforced inactivity would be less tedious for the more imaginative man.

Saxton selected several tapes from the book shelf and put them in the magnifier. "When I find something that sounds likely," he said, "I'll read it. Stop me if you want to discuss anything I find."

A HALF-HOUR later Saxton said, "Socrates maintained that the fewer our needs, the nearer we resemble gods. Do you suppose Al-fin and his tribe are approaching godhood?"

Wallace's answer, from the bunk where he lay, was a dis-courteous grunt.

"I thought so too," Saxton quipped. He went on reading.

Almost an hour went by before he spoke again. "This might help put our savages in the proper place in their cycle," he said. "Quote: 'Giambattista Vica, a native of Naples, held a theory that human history progressed in cycles, each of which followed the same course. The first move in a civilization began when man, terrified by the forces of nature, invented and worshipped gods in order to placate

them. Next, he made up myths of demi-gods and heroes, and arrived at the idea of kingship. Finally, from kingship he came to democracy, which degenerated into chaos; after which the next cycle started and the process was repeated."

"Interesting," Wallace said. "But even if it fits, I think we understand well enough where these people are in their cycle. What we want now is a clue as to what makes them different."

Wallace was about to doze off when Saxton said, "Listen to this: . . . in which he first injected the hormone that produces milk in the breasts of nursing mothers into the bloodstream of starved virgin rats and then introduced newly hatched squabs into their cages. Instead of devouring the luscious meal placed before them, the starved virgin animals acted as tender foster mothers to the helpless creatures." He looked across at Wallace expectantly.

"I'm afraid I don't—" Wallace began.

"Don't you see?" Saxton asked. "Something about the food here has made the natives different. We've got to find that food."

"That might be true also," Wallace answered slowly. "But I'm not as interested in finding what caused the difference as I

am in finding the difference itself."

"Find one and you find the other," Saxton argued. He held up his hand as Wallace made as though to speak. "Sleep on it," he said. "Maybe we'll have some ideas by tomorrow."

THEY WERE ABLE to extract no new clues from the tracking of the bloodhound by the next forenoon. Neither man could arrive at any means of thwarting the alien machine. Wallace had checked the graph track minutely, looking for signs of a cycle, or cycles, in its movements. He ended up convinced that none existed. It apparently operated entirely at random.

At the mid-day meal Saxton suggested, "Let's pay those fellows in the woods another visit."

"We may as well," Wallace agreed. "We're helpless here until we can come up with some new idea."

They finished eating and strapped on their sidearms. They were not certain that the path they took through the woods was the same they had taken with Al-fin two days before, but at least it led in the same general direction.

An hour later they were lost. Their way had not led them to the tribe of naked savages and they had no idea where else to look. They were debating

whether or not to return to their ship when they stepped out into a clearing—one larger than any they had come on earlier.

In the center of the clearing rested a spaceship! From where they stood they could see that its hull was rusted and weather-beaten.

"That hasn't flown in a long time," Saxton said, after the first few minutes of wonder.

"Probably not since it first landed here," Wallace answered.

The clearing about the vessel had been kept free of brush and bushes, and when they went across, and through the open portal of the ship, they found the inside immaculate.

"They certainly keep it clean," Saxton observed.

"It may be a shrine to them," Wallace said. "That would explain why we found Al-fin kneeling when we landed, and yet why he treated us so nonchalantly. He was worshipping our ship, not us."

"I hope they don't find us here," Saxton remarked. "We might be violating some taboo."

Most of the interior fittings of the vessel, they found, had long ago rotted away. Only the metal parts still remained intact. The instrument board was unfamiliar to them. "Pretty definitely an early model," Wallace said.

Saxton found something on

one wall that held his absorbed interest. "Come here, Ivan," he called.

"What is it?" Wallace asked, going over to stand beside him.

"Read that."

Wallace read aloud from the engraved plaque: "*Spring, 2676. We, the Dukobors, leave our Earth homes in the hope that we may find a dwelling place for ourselves and our children, where we may worship our God as we believe proper. We place ourselves in His hands and pray that He will watch over us on our journey, and in the time to come.*"

"That's over nineteen hundred years ago," Saxton said.

"Soon after the discovery of spacebridge," Wallace added. Without being aware of it they both spoke in whispers.

They inspected the vessel for some time more, but found little of any further interest.

A SHORT TIME after they left the ancient spaceship Wallace and Saxton stumbled on Al-fin and his group of naked natives.

This time they made a concerted effort to communicate with Al-fin, and one or two of the others, but with no more success than before. Neither side could understand more than a few words of the other's language, and they could accomplish very little with signs.

Al-fin sat with them for a time, until they saw him tilt his head in the gesture they remembered. On his face was the same expression of listening. After a moment he rose leisurely and indicated that they were to follow him. Most of the other natives, Wallace noticed on rising, had already gone over and bunched together at one end of the clearing. They appeared restless, but not frightened.

"What's it all about?" Saxton asked.

"I suspect there's another cat in the neighborhood," Wallace answered.

Saxton pointed to the center of the clearing. Beneath a tree the oldster with the scar on his arm sat alone, seemingly unaware that the others had left him.

"Are they using their chief for a decoy?" Saxton asked.

"Perhaps the old duffer isn't the chief," Wallace answered. He reached for his firearm.

A dirt-encrusted hand closed over his own. He looked up. Al-fin shook his head.

Wallace turned to look back at the clearing just in time to see a big cat step out of the bushes. It glanced across at them with an easy hate in its red-shot eyes, and turned its attention to the fat man, who was nearer. Slowly it gathered itself to spring.

Wallace shrugged off Al-fin's hand, that still rested on his, just as the cat left its feet. He had no chance to fire. The cat finished its spring—and the ground caved in beneath its feet. A moment later they heard its snarling and spitting from several yards underground.

Calmly, unhurriedly, the natives picked boulders from the ground and carried them to the pit. They dropped or threw them down on the cat until its snarls changed from anger to pain, and died completely.

Wallace and Saxton walked to the edge of the pit and looked down. The cat was dead. Its carcass lay sprawled over those of another dozen of its kind.

"Evidently they've used this method often before," Wallace remarked. A thought occurred to him and he looked at Saxton.

Saxton nodded in unspoken agreement. "We've just seen another demonstration of that ability we're trying to find," he said.

"But what is it?" Wallace asked.

"Can it be anything except acute hearing?"

"If it was only that, how did they know where the cat would appear, and what it would do? If it had circled the pit they would have been helpless. Yet they did nothing except retreat to the far side of the clearing and wait."

Saxton shook his head in defeat. "They did act with plenty of assurance—but how did they know? Do you think we should stay around some more, and watch how they operate?"

Wallace glanced up at the rapidly moving sun. "We'd better get back to the ship," he said. "We have only about enough time to reach it before dark. We can come back again tomorrow, if you want."

THAT EVENING as he lay on his bunk, Wallace noted that Saxton was growing restless again. Their being unable to find a way to evade the bloodhound was bringing the irritable part of his nature to the surface. The time had come again to furnish diversion. "I'm sure we have all the clues on those savages," he said. "If we just understood how to fit them together."

It worked. Saxton stopped pacing and bared his teeth in a smile. "You still think they developed some special ability, don't you?" he asked. "I don't agree. Nineteen hundred years—the time the colony's been here—is too short for any change to take place. Evolution doesn't work that fast."

"I'm not thinking of the slow process of adaptation," Wallace said, "where the most fit, and their descendants, are the ones that tend to survive and propa-

gate. What I had in mind was a form of genetic change. Such as a plant, or an animal, appearing that is different from the rest of its species. A botanist, or a biologist, would call it a 'sport.' Like the appearance of a black rose on a bush of red roses. If the black rose is more fitted to survive in its environment, or if it is artificially propagated, it would soon replace the red."

"You think then that a child was born here with a difference that made it more fit to survive in this environment than the others, and that the savages we saw are its direct descendants?"

Wallace nodded.

"But wouldn't it be too much of a coincidence that the particular trait should appear just when it was needed?"

"I don't think so," Wallace said. "Nature has a way of providing the particular trait just at the time it *is* most needed. A good example is the way more male children are born during a war. There's no known explanation for something like that. But nature seems to know what is needed—and provides it."

"That sounds plausible," Saxton said, after a minute of consideration. "According to your theory, then, those savages possess an ability radically different from that of normal humans?"

"Not necessarily *radically* dif-

ferent," Wallace answered. "It would probably be a trait inherent in all of us, but not so evident, or fully developed. Or perhaps it has made its appearance before, in rare individuals, but not being a survival characteristic—where it appeared—it died. Something like telepathy, or poltergeist, or any of the other so-called wild talents."

"I'll admit I'm stumped," Saxton said. "And I don't think we'll learn anything more here without staying and observing them a lot longer than I'd care to. If we ever get back home, there are specialists in that sort of thing, who can do more with the facts we gave them than we can."

Wallace sighed. "I suppose you're right," he said. "I hope we learn what it is before we leave, but of course we can't wait if we get the chance to go."

EARLY the next afternoon they spied a figure hurrying toward them from the edge of the wood.

"It's Al-fin," Saxton said. "I wonder why he's in such a hurry."

"He's carrying something under his arm," Wallace commented.

They waited while the native puffed his way up the bank of the small plateau on which the spaceship rested. When he reach-

ed them he stood for a moment fighting to regain his breath. It was evident that he had run long and hard.

Pushing his package under one arm, Al-fin raised the other and pointed at the sky. Bringing his arm around in a wide half-circle, he made a sound with his lips like an Earth bumblebee. When he reached the end of the half-circle he held a finger out in a long point. He ended the performance by holding his hand out toward the spaceship and making a scooping motion—as though he were throwing it into the air. Three times he repeated the maneuver.

Wallace watched him in puzzled silence. At the end of the third repetition his eyes widened with slowly dawning understanding. He ran for the portal of the ship. "I'll be right back," he tossed over his shoulder.

Inside he glanced quickly at the s-tracer. Its needles indicated that the bloodhound was directly across the planet from them!

He dashed back to the open portal. "Inside! Quick!" he called to Saxton.

Saxton wasted not a minute in obeying. As he pushed past Wallace, Al-fin came to the portal of the ship. He extended the parcel he had been carrying under his arm to Wallace. "Meat," he said. "Bye."

"Thanks," Wallace answered,

taking the gift. "Thanks—for everything." He closed the portal quickly.

THREE HOURS LATER they were in hyperspace. Another five minutes and they were in the Ten Thousand Worlds portion of the galaxy—and safe.

Saxton turned over on his side. He had made a faster recovery from the nausea of the bridge than usual. "Okay," he said to Wallace. "Give."

Wallace smiled. "Perhaps we'd better open Al-fin's gift first," he said, deliberately teasing Saxton with his procrastination. We unwrapped the several large leaves from the package on the table.

Inside was a man's fat arm—with a long scar running from shoulder joint to elbow!

SAXTON GROANED and dashed for the lavatory. This time he was sicker than he'd been during the jump. When he turned, streaks of pale green showed through the duskiness of his cheeks. "They're cannibals," he whispered.

"I wouldn't hold that against them," Wallace said. "It might have been one of the necessities of their survival."

"I suppose so." Saxton turned intently to Wallace. "This much I got," he said. "When Al-fin said 'Bye,' I figured that he was

telling us to get out. But how did he know that it would be safe—and how did you know enough to trust him?"

"I can't take too much credit," Wallace said. "Just all at once everything clicked together—at the exact moment I understood that Al-fin was trying to tell us to leave. You remember we decided that their survival characteristic would probably be something inherent in all of us, but not developed—or at least not to the extent that an isolated colony of humans would need here?"

Saxton nodded.

"Well, I'm convinced that the answer is intuition."

"Intuition?"

"Yes," Wallace said. "Everyone knows what intuition is, and has it to some degree. With no evidence to back up his reasoning a person knows that something is going to happen. Sometimes he can even give exact details. It's a definite, perceivable faculty. Yet no one has ever been able to explain just what it is, or even how it works. But if you looked at it in another way it wouldn't be so mysterious. It's another sense—too deeply buried in our subconscious to be consistently active. Those savages needed it here—fully developed—and nature provided it."

Saxton pulled himself up on

one elbow. "And with it they can practically see what's going to happen in the future," he finished for Wallace. "They can predict—and be right every time! That's how Al-fin knew it would be safe for us to leave." He paused. "It all fits. I think you've got it."

Wallace smiled. "My guess is that they can't see very far into the future. That's why Al-fin was out of breath when he came. By the time he learned about the coming opposition of our ship and the aliens' he had to hurry to get to us, and tell us, before it was too late."

Wallace rubbed the stubble of whiskers on his chin with his knuckles. "We'll have to report this planet suitable for colonizing," he said. "I hate to think what will happen to those poor savages when civilization moves in. They'll soon lose that future-seeing."

Saxton's eyes widened at some inner thought. He sat straight up in his bunk. "Will they?" he asked. "Or will it work the other way? Someday the children of those naked savages may . . ." He stopped. Wallace recognized the glaze of abstraction that moved over his features.

Saxton began to sing a stanza from an old popular song that had recently been revived: "*There's gonna be some changes made . . .*"

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By the editor



WANTED: VOLUNTEERS

AS THIS ISSUE goes on sale, the International Geophysical Year is about to begin. By the time it ends, our knowledge of the earth and its relationship to the universe around it should be greatly increased. And we science-fictionists will have the evidence of the satellites to back up our long-standing belief that man is on the road to the stars—and has been for some time.

Meanwhile, we already know a good deal about who the first space pilots will be. Theories and conclusions on this question were discussed, calmly and matter-of-factly, in an article called "Selection and Training of Personnel for Space Flight," published in the February 1957 issue of *The Journal of Aviation Medicine*, which is the official publication of the Aero Medical Association. The paper was written by Major David H. Beyer, USAF (MC), and Saul B. Sells, Ph.D. In their opinion, "space flight is not drastically different from most aspects of

aviation which are now familiar"!

The job under consideration is an orbital flight to a circular satellite orbit from 500 to 600 miles above the surface. The first manned flight, according to the article, will probably remain in its two-hour orbit for weeks or months, if no major unforeseen problems arise. The crew, it is estimated, will consist of from one to five members, who will be cross-trained so as to be able to handle every duty.

Qualifications for crew members break down into three categories: aptitude and skill requirements, biological and physical requirements, and psychiatric and psychologic adaptability.

The aptitudes and skills desirable will include proficiency in piloting high-performance aircraft, high general intelligence, mathematical ability, and expert knowledge in fields such as aeronautical and electronic engineering, navigation, and astronomy.

Nothing that's surprising there.

The biological and physical requirements will not be significantly higher than those now in force for jet pilots. The cabin of the spaceship will be engineered to provide maximum protection, and it is estimated that an upper limit of 9 G will be encountered during acceleration and deceleration. Supermen will *not* be required. Neither, incidentally, will the midgets sometimes appearing in science fiction.

THE MATTER of psychiatric and psychologic adaptability remains—and this should be particularly interesting to science fiction readers. Under this heading, the authors list intense motivation, cooperation, and adventurousness as the main characteristics the men who test the candidates will look for.

The necessity of cooperation is obvious. Quarters will be cramped, though not uncomfortable, and each crew member may be called upon to perform any necessary task in an emergency. Adventurousness almost goes without saying; these men will, of course, be taking part in the greatest adventure of our time.

And what, exactly, does "intense motivation" mean? Simply that the men who lead the way into space will be those who genuinely want to do so. The first crews will be made up entirely of volunteers.

Incidentally, Beyer and Sells point out that there are no established ways of testing for these characteristics—but research currently being carried on is developing "useful instruments and approaches."

A few conclusions seem obvious. Science fiction readers have often been called wishful thinkers, escapists, and dreamers. Undoubtedly, some of them are. But not all of them. For if intense interest in spaceflight is one of the traits for which our pioneer space pilots will be selected, chances are that most of those space pilots will be enthusiastic readers of science fiction.

And it is extremely pleasant to feel sure, while putting together an issue of INFINITY, that it will undoubtedly be read by many of the people who will occupy those acceleration couches when man takes the first big plunge upward and outward!

—LTS

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• The next Infinity goes on sale AUGUST 1! •

Feedback



JUST PICKED UP your newest issue and saw your stories, "Blank!", "Blank?", and "Blank . . ." To me, that is something new in science fiction. Keep it in each issue and have different authors each time your magazine is put out. Have a different title each time and, please, have stories by Arthur C. Clarke. I haven't seen a story by him yet in your magazine. (*Clarke has appeared here fairly often—and this issue should make you very happy!—LTS*)

Your covers are great. Each one is different from the rest. Tell Emsh to keep up the good work.

I see in your June issue that you had only *one* cartoon. What's a S-F book without cartoons? Please, have more.

So keep INFINITY coming, both through time and space.—
Stephen Sala, Osburn, Idaho.

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The June issue of INFINITY was the best issue since #2.

Lester del Rey's novelet, "The Band Played On," was *extraordinarily* good! I agree wholeheartedly with Mr. del Rey that

today's science fiction is laid so far into the future that the plot is beyond the point of probability. But science fiction stories laid in the 20th century are always more successful because they are laid in the surroundings that the readers are familiar with and are therefore interested in. For instance, in one of these stories laid in the distant future, one would run across a passage such as this: "Norda, the capital city of Deneb XII, was completely disintegrated." In a story written about the current controversies of the world you might meet something like this: "Washington, D. C., was completely demolished by a swift stroke of the Communist forces." Now which one would you be more interested in? Would it actually affect you any because "Norda" was disintegrated? I think I've proven my point well enough. One last word: I'd like to see more stories like "The Band Played On" in the coming issues of INFINITY, more stories with a 20th century setting.

Now to comment on the other tales: "Pilgrims' Project" was

also very well-written although I would say highly improbable. "The Night of No Moon" and "Age of Anxiety" were just about average, average for INFINITY, let's say; very good compared to the bulk of the current science fiction magazines.

The "Blank" series was highly intriguing to me and I got the most enjoyment out of the zine from these three short-shorts. The short-short story always seems to affect you more and bring a point over which sets you to thinking. Brevity has its advantages, proven by these three stories.

"Fanfare," this time, was fair. It ranges from poor to excellent. Keep it up, though; being close to fandom will always bring success to a stf magazine.

I love Damon Knight's reviews. Truly, he's the best reviewer in the business. You're highly lucky to get a competent reviewer such as he. Although he gets rather hysterical at times, he dissects the books thoroughly giving his own exact opinions of them with an air of defiance. Don't lose this boy, keep your eye on him every second or else he'll be snatched up by one of your jealous rivals and you'd never get him back.

If I may enter the "nude-on-cover" feud, I'd like to give my own views. Nudes on the cover

are entirely all right if they illustrate a form of the story. If the story is twisted into some farfetched impossibility such as the one Jerry Greene mentioned, this illustrates a lack of taste and very poor editorialship. Otherwise, nudes on the cover are all right by me, and I feel that only prudes would object.

I didn't quite approve of Emsh appearing on all your covers but he outdid himself on this issue. He seems to be constantly improving.

You're lucky to get Schoenherr. He's marvelous. He resembles a cross-section of the work of Emsh and Finlay. Not quite as good as either, but he still has a long way to go, proven by his poor female faces, but as I said he has a long way to go and I watch with interest for improvement in Schoenherr; it's evident that he has what it takes.

MY CONFUSION IS HOPELESS! Go monthly!—Bill Myers, 4301 Shawnee Circle, Chattanooga 11, Tennessee.

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There is only one thing wrong with your magazine. It always seems to run out of stories, or maybe the front cover is just too near the back one. I never miss either INFINITY or SCIENCE FICTION ADVENTURES.

I especially enjoyed the three stories entitled "Blank." The short stories always seem to

have a terrific punch at the end.

Robert Young's "Pilgrims' Project" was very good too. In fact, I enjoyed every page of this June issue, as I have all the others.

I am so glad to hear INFINITY will be out every six weeks and can hardly wait until it becomes a monthly. I practically haunt my magazine dealer now.

Keep up the good work.—
Dorina J. Hill, Cayuga, Indiana.

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Have just gone through my first copy of INFINITY SF—vol. 3, no. 2—and can't resist making a few comments: how did you manage to get two stories of such different quality as "The Band Played On" and "Pilgrims' Project" in the same issue?

Del Rey's story makes pretty good reading. His descriptive detail and dialogue are believable, though I can't quite see why an experienced space pilot with a thousand moon trips to his credit would be stuck on a garbage detail. Seems like either he or the big brass would put his talents to better use—flight instructor, maybe.

But Robert Young's piece of nonsense might as well have been blank pages! The notion of rigid controls on sex (legal and otherwise) has merit as a potentially good foundation for a story, but it has been saddled

with the burden of conventionalized characters and technical inaccuracies. The girl is beautiful and full-bosomed—contrast her with Sheila who is more realistically plain, healthy, and willing to help her fiance feed hogs—and the hero unwittingly falls into a scheme to save mankind. The villain is definitely villainous for all to see, and Gets His in the end. And the idea of the only source of metal in the 22nd century being early relics of the auto industry is way off the mark: the oceans are a literally inexhaustible source of magnesium metal, and a good part of the earth's crust is aluminum. When the need arises, these and other non-ferrous metals such as titanium will be used more widely. Right now, steel is cheaper. But Young doesn't take this into account at all and extrapolates our civilization into the future rather badly, thereby neglecting the science that should be present in a science fiction story.—H. S. Spacil, 9 Westgate, Cambridge 39, Massachusetts.

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Emsh's cover was good, but not as impressive as some of the others he has drawn for you. The best inside illustration was the one by Emsh for "Pilgrims' Project." That was really some 'copter he drew up.

The stories were all either

good or excellent. One of these days you are going to slip up and print a bad story. Then watch me pounce on you! You haven't done it yet, though. What's the matter with you? Do the stories you accept actually have to be good? Silliest idea I ever heard of! You trying to be different or something?

"The Band Played On" by Lester del Rey was the best story in the issue, but Robert Young's story did a fine job of running second. Lester del Rey's story did what few other stories in the SF gender have done. It showed how a man normally considered insignificant can act under pressure, and that he could be just as "heroic" as any other man. If ever good SF is accepted by the general public this story would make a great script for either television or the movies.

The three "Blank" stories were very pleasing. If I was to rate them I would put it Ellison, Garrett, Asimov in just the opposite order of the way you presented them. I am sure everyone noticed the familiarity of the name for Ellison's "hero." I also

was interested in Akisimov's middle name. Amadeus would be a combination of the Latin words, "ama" and "deus," which together would stand for "I love God." Did Harlan have some subtle reason for this?

I think this idea of giving authors just a one or two word title, and then making them stick to it is great. I imagine most authors would like to try to do it, too. Most people always take a challenge.

Your departments were the best they have ever been. Phyllis Economou's story should convince many people that there actually are intelligent people in fandom. There isn't, of course, but "Cycle" might convince somebody there is. (*How's that again?*—LTS)

I have reached the end of another issue it seems. Too bad. But hark! Instead of waiting two whole months, now I have to wait only six weeks. And speaking of INFINITY going "six-weekly," boy, why ain't it monthly? Or weekly. Or daily . . . —Jerry Greene, 482 East 20th Street, Hialeah, Florida.

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